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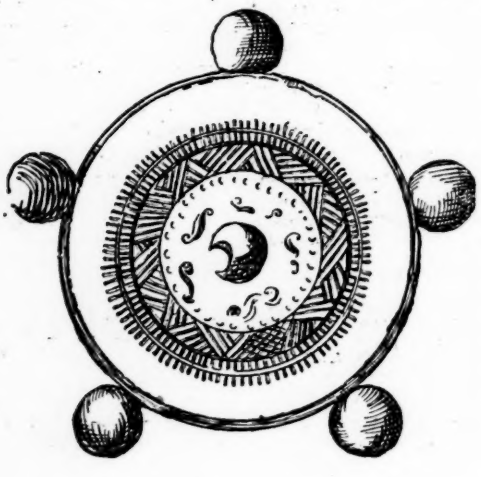
BELLED MIRROR OF ANCIENT JAPANESE MANUFACTURE. THE MIRROR, STILL AN OBJECT OF RELIGIOUS HONOURS, WAS A VERY SACRED EMBLEM TO THE ANCIENT JAPANESE.—The mirror, symbol of the sun and concrete token of the presence of the sun-goddess, figures largely in Japanese myths. In one of these the sun-goddess gives the mirror to her grandchild, Ninigi, in sending him down to be the ruler of the world; she tells him to look upon it as her emblem or even as her actual self. The mirror was considered, also, to be the symbol of virtue and was buried with the dead as an amulet against decay. An especially sacred mirror mentioned in the Chronicles of Japan under the date 92 B.C. was an object of worship at that time; it was, later, enshrined at Ise, where it is still preserved with the greatest veneration. Sun-worship was the central feature of the early religion of Japan. Shinto, "the way of the gods" is, however, now almost extinct. Nevertheless, it served to give a religious quality to some of the principles which have led to stability in the state, *e.g.*, to the idea of reverence for the Mikado.



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A Lecture
ON
ACUTE CEREBRAL LESIONS AT DIFFERENT AGES.

DELIVERED BEFORE THE WEST SUFFOLK DIVISION OF THE BRITISH MEDICAL ASSOCIATION, OCTOBER, 1928,

BY

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ACUTE cerebral lesions may be reckoned among what my old teacher, the late Sir William Gowers, once called "the uncommonplaces of medical practice." Not occurring often enough to become familiar, if not banal, yet not so rare as to render ignorance of their nature and treatment pardonable, they are seen by the practitioner more frequently than by the consultant, and in nearly every instance necessitate his coming to quick decisions and adopting prompt therapeutic measures. Obviously he must have a certain confidence in his own diagnosis when such circumstances prevail, and must have at ready disposal some formulation of diagnostic elements on which to rely during the first hours after the lesion reveals itself. A waiting policy does not always serve at these times.

In this, as in many other instances, the problem is to know how to approach the problem. Working rules are necessary if he is to grasp the essential features of the situation and avoid being misled by non-essentials. Text-book descriptions doubtless cover all eventualities, but their application to the practice of medicine leaves him on occasion in perplexity. I do not pretend that the problem can be simplified by any rule of thumb devoid of exceptions and infallible in its working; all of us commit errors of diagnosis and of judgement, and sometimes hesitate not so much from ignorance as from fullness of knowledge. When this situation develops, another dictum of the same great clinical teacher deserves to be recalled: "Be decisive in your indecision"—in other words, be sure of your reasons for not being sure, and adopt measures calculated at least to do no harm.

One of the most convenient and practical ways of dealing with the problem of an acute cerebral lesion is by attending to the age of the patient. At any given age period, what are the probabilities? The generalizations sketched below have their value, relative though not absolute, and are worth bearing in mind.

I. IN CHILDREN AND YOUNG PEOPLE.

Numerically and proportionately less common in childhood and early adolescence, abrupt cerebral affections constitute no actual rarity and are often not a little disconcerting. Since the observer is able to dismiss all thought of degenerative lesions from his mind in such cases, the pathological possibilities are more or less restricted to toxic and toxi-infective processes, pressure, trauma, and blood-vascular states. Of these, the first-named form the majority.

1. Much the most frequent is one or other variety of *encephalitis*, by which pathological term is to be understood a brain infection, whether specifically known or not. A sporadic encephalitis (not, in all probability, identical with what is now called epidemic encephalitis)—sometimes described as acute non-suppurative encephalitis—is a fairly common affection of childhood, producing usually a hemiplegia and less often a diplegia. When a preliminary stage of malaise, fever, and vomiting, with headache, possibly with delirium and stupor, is succeeded by generalized convulsive attacks with unconsciousness, rigidity, cyanosis, and so forth, and followed by paralysis on one side of the body, the syndrome is not so sudden as to preclude a very good idea of its nature being formed. But in a minority of cases the paralysis supervenes abruptly on a convulsion, or even without the latter, just as it appears unheralded in a small proportion of cases of acute poliomyelitis. Diagnosis then is perhaps less definite, but the probability is not; lumbar puncture is likely to reveal a finding comparable (in greater or less degree) with that of acute poliomyelitis should the case be one of acute polioencephalitis—a poliomyelitis variant; if the fluid is negative, however, the case may none the less be one of encephalitis, though not occasioned by the virus of infantile paralysis.

In a recent instance a schoolboy was sent to bed with an ill-defined ailment—slight rise of temperature, headache, pains in the neck; on the third day he developed diplopia, followed by complete aphagia and a remarkable dysphonia, a high-pitched, "reedy," "piping" intonation which he was incapable of modulating. Lumbar puncture showed a fluid differing immaterially from the normal, and the case was fairly, as I think, classified in the group of acute bulbar encephalitis.

I have often thought that some of the obscure cases of quick death in seemingly healthy children, the sole symptoms being clouding of consciousness with respiratory or cardiac embarrassment and failure, are attributable to polioencephalitis of the medulla, of the class already mentioned—namely, that without recognizable prodromata. Here, indeed, lies one of the serious difficulties connected with polioencephalitis; no definite relation has been made out between the mildness or otherwise of the preliminary syndrome and of the paralytic consequences. The former may actually escape notice, or be ignored, yet palsy may set in after a truly fulminant fashion.

Of less diagnostic difficulty are the varieties of cerebral disorder arising abruptly in the course of one or other of the *specific fevers and exanthems*, and set down (in some instances at least) to encephalitis. These juvenile encephalopathies are well recognized, however rare their incidence and variable their actual pathology. They are known as an occasional development in scarlatina, diphtheria, measles, mumps, pertussis, typhoid, small-pox, etc., as well as in influenza, pneumonia, and other infections. The underlying pathological condition is more frequently a matter of surmise than of proof; sometimes a haemorrhagic encephalitis, in other instances it is a vascular state of haemorrhage, embolism, or thrombosis, or a cerebral oedema associated with nephritis, or a serous meningitis. In a valuable series of papers J. D. Rolleston[1] has collected information bearing on these rather out-of-the-way cases, as has recently also my former house-physician and present colleague W. P. H. Sheldon.[2]

Attention may next be directed to the occurrence of *encephalitis after vaccination* (ordinary cow-pox), a sequel that has aroused some concern in the course of the last three years, over one hundred cases having been recorded in that time (Lucksch,[3] Bastiaanse,[4] Turnbull and McIntosh,[5] Wiersma,[6] Perdrau,[7] Bouman,[8] and others). There can be little doubt that such cases were formerly extremely infrequent, and the conclusion seems justifiable that they are somehow connected with the times through which we are passing; at any rate, one theory at present offered is to the effect that encephalitis after vaccination is due to activation by the vaccine of another "invisible virus," conceivably that of epidemic encephalitis or a herpetic one. Valuable experimental evidence in favour of the view that the encephalitis is not due to the vaccine itself has been furnished by Pette.[9] Clinically, convulsions and hemiplegia seem to be rather common in vaccination encephalitis; an initial stage of general cerebral disturbance is usually definite and of some little duration, although localizing symptoms develop with rapidity. The pathological lesions resemble those of acute disseminated encephalomyelitis of the adult.

2. Of interest and importance is the group characterized by symptoms suggestive of *meningitis* or pointing to the existence of *meningeal reactions* of toxic or toxi-infective origin. Classified as meningismus or as circumscribed serous meningitis (both terms being as a fact rather indefinite from a pathological viewpoint), the type of case is that in which intracranial symptoms (cerebral, cerebellar, pontobulbar) develop unexpectedly and alarmingly early or late in the course of an indefinite illness, with mild meningeal indications, for which no source of infection is discoverable. Serous meningitis is the least sinister of all meningeal states; it consists chiefly in an increase of cerebro-spinal fluid in the appropriate cerebral and meningeal spaces, producing an internal and/or

external acute hydrocephalus, apparently always of a non-microbic character—in some instances (and these are the simplest diagnostically) a reaction to sepsis at some near but extra-meningeal spot (ear, nasal passages, tonsils). To this variety the term "meningitis serosa comitans" is sometimes applied. In numerous other examples of the affection, however, the meningeal reactions are localized (meningitis serosa circumscripta), producing focal symptoms and signs, although the underlying source seems to be a diffuse toxicosis of diverse kinds. Lumbar puncture yields an essentially negative fluid, sterile, with cytology little altered, but with perhaps a protein increase, and usually under considerable pressure. The remarkable feature of most cases is also a fortunate one; after withdrawal of fluid the symptoms are mitigated, and in not a few cases soon entirely disappear. I have been misled by cases of this kind on more than one occasion.

A little boy of 8 developed in the course of a few hours a complete right hemiplegia and aphasia, signs of general disturbance being minimal. No source of infection could be found. I diagnosed the case as one of encephalitis and gave a guarded prognosis. Lumbar puncture yielded a normal fluid under pressure, and within twenty-four hours thereafter the symptoms had completely vanished.

Cases of this kind are highly deceptive, but other examples of meningitis serosa simulate cerebral tumour (so-called pseudotumor cerebri) and are less calculated to give rise to acute cerebral symptoms.

3. We do well to bear in mind the possibility of insignificant *traumata* being succeeded after a variable interval by sudden cerebral disturbance. Trifling knocks raise haematomata on youthful heads with surprising ease. The serous meningeal reactions already alluded to may follow tearing of arachnoid tissues by trauma; in other cases subdural or subarachnoid haemorrhage results. I have seen more than one example of trivial injury turning out to be serious, but none so dramatic as that recorded long ago by Erichsen.

"A little girl was going downstairs with her mother to dinner. She said, 'I will go first, mamma,' and started to run downstairs, but she missed her footing and fell forwards, striking her head slightly against the wall. She felt a little dazed at the time, but went to her dinner, ate, and afterwards felt slightly sick. She was sent to bed, slept soundly, and was dead next morning. There was a clot found between the dura mater and the skull on the side of the head that had been struck, but no fracture."

The fatal injury may be so slight, indeed, that no concussion symptoms are produced, a point to which particular attention is directed. When we remember that in the growing child both periosteum and meninges are highly vascularized for purposes of nutrition, it is likely enough that corresponding to the visible "bump" where his head has been knocked is a haematoma greater or less in degree of the intracranial membranes. This state of affairs, in point of fact, has been found by Wood Jones,[10] who adduces evidence strongly suggesting a venous and not an arterial origin for the haemorrhage. Sheldon's[2] series embraces several cases belonging to this group; in one instance a child hit his head against a table; in another, a boy fell off a kitchen chair.

Consideration of this part of our subject naturally leads to the problem of what has been called *traumatic delayed apoplexy* ("traumatische Spätapoplexie"), a matter of peculiar medical and sometimes medico-legal importance. The condition is not confined to youthful cases, but may be conveniently referred to in the present section. A latent period of days or weeks may elapse between the date of the injury and the onset of ominous cerebral symptoms. Numerous instances of delayed apoplexy are now on record (Bollinger,[11] Marie and Crouzon,[12] Lambert,[13] Buzzard and Cunning,[14] Warrington,[15] Allen,[16] and others). For admission in the class the appended criteria require attention: (1) cases in which apoplexy might develop spontaneously must be rigorously excluded (syphilis, nephritis, alcohol, heart disease, arterio-sclerosis, etc.); (2) the injury must have been definite though not of necessity severe, or producing unconsciousness; (3) the symptoms of the lesion must have appeared within a short space of time and under observation. During the interval between injury and apoplexy cerebral symptoms of a general kind and slight in degree may be noted; sometimes they appear to be non-existent. In one of Sheldon's cases a child fell against a cupboard, and "several weeks" of seeming health elapsed ere vomiting and loss of consciousness set in, these symptoms preceding death by only a few hours. But in the Buzzard-Cunning case, after a trivial head injury through a fall, seventeen days of headache were succeeded by drowsiness and other symptoms of pressure, and a craniectomy revealed bleeding from the superior longitudinal sinus.

It is impracticable to lay down any exact time limits for cases coming within this category; only those can be admitted in which causal connexion between trauma and symptoms is reasonably definite and in which from the date of infliction of the former a reasonably brief period elapses ere the latter make their appearance. I have had to adjudicate in a case of right hemiplegia and aphasia developing suddenly four weeks after a trifling knock on the skull through the patient (a man of 46) striking an overhead rafter, and I decided against the diagnosis of delayed apoplexy.

4. Where some more or less obvious *blood state* is in existence the explanation of acute cerebral lesions in youthful subjects is not obscure. I need only allude in passing to the occurrence of haemorrhage, thrombosis, or embolism, or combinations of these, in heart disease; in marantic cases, in leukaemia, splenic anaemia of infancy, purpura haemorrhagica; in any severe anaemia, in scurvy, haemophilia, and so forth.

5. There remain for discussion the always difficult and disconcerting cases of sudden death from *haemorrhage* in children and adolescents, of which numerous examples have been published (cf. a useful paper by Hawthorne[17]). Unless an autopsy is obtained cases of this kind are shrouded in obscurity, and their pathology is a pure speculation; if the patient recovers it is equally so. Here we touch what Sir William Gowers once called "the old and inevitable antagonism between pathology and therapeutics." Each flourishes at the expense of the other, and the ends for which we gain our knowledge can be the chief obstacle to its acquisition.

Briefly, in my experience the pathological possibilities are: (*a*) bleeding from an unsuspected vascular intracranial tumour; (*b*) bleeding from an otherwise undiscoverable miliary aneurysm ("congenital aneurysm"); (*c*) bleeding from a structurally defective blood vessel without aneurysmal formation. A fourth possibility has been suggested by Goldflam[18]—namely, (*d*) bleeding of the nature of capillary oozing during hyperaemia following constriction—a disorder of vasomotor function. The term "spontaneous subarachnoid haemorrhage" is in vogue for cases of this kind, though it is somewhat misleading. Clearly, if evidence of aneurysmal formation or neoplasmic haemorrhage is discovered at necropsy the case should in point of fact be described under the heading of cerebral aneurysm or tumour, as the case may be. The literature on these types is considerable, clinico-pathological instances and useful reviews having been published by Symonds,[19] Beadles,[20] Fearnsides,[21] Turnbull,[22] Weber and Bode,[23] Marburg,[24] and many others.

As is to be expected, the symptomatology is highly variable, depending on both the degree and the site of the haemorrhagic extravasation. Elsewhere[25] I have given a full account of "spontaneous" leakage from a frontal tumour in a youth of 19; the extravasation spread through the ventricular system and passed under the basal meninges, reaching the vertex in one direction and the spinal cord in the other. In this instance the clinical picture for some seventy-two hours was that of decerebrate rigidity. The usual syndromes of ventricular, cortical, pontine, basal haemorrhage may be encountered.

A recent example was the case of a healthy schoolgirl of 17, who, after two days of insignificant malaise diagnosed as nothing more than a cold, became unconscious at 3 o'clock in the morning and was dead at 9. Lumbar puncture yielded a fluid laden with fresh blood. No necropsy being granted the case remains as obscure as it is tragic.

I have also had occasion to observe more than one instance of cerebral haemorrhage in youthful subjects supervening apparently on excessive emotional disturbance. Such cases provide food for thought even if objective corroboration is awanting.

A married woman of 20 ascertained that her husband was conducting a liaison with another person. In a state of intense emotion she went to confront them with the righteous indignation of a young wife. After a painful scene she left the house and fell unconscious on the pavement outside. Two days elapsed ere consciousness returned, accompanied by right hemiplegia and complete motor aphasia. Now, when she is 45 years old, the hemiplegia remains, and a trace of the former speech defect.

Here, doubtless, we may imagine a miliary aneurysm or a weakened spot in the wall of the left Sylvian artery to have ruptured under the influence of the altered vascular balance attributable to excitement.

II. In Early and Middle Adult Life.

In the age periods comprised by the twenties, thirties, and forties most of the etiological factors already enumerated are still in the picture. Trauma, encephalitis, blood states, cardiac disease, and "spontaneous" vessel rupture must always be considered possibilities. To these we now add acute cerebral lesions associated with (1) pregnancy, parturition, and the puerperium; (2) neurosyphilis; (3) haemorrhagic pachymeningitis.

1. Much that is still enigmatic surrounds the occasional development of acute hemiplegia (or paraplegia) *before, during, or after confinement*. Half a century ago clinicians were attracted by the conception of "reflex paralysis"—sometimes also described as "urinary paralysis"; Sir Samuel Wilks[26] contended that a paraplegia might be induced by an external irritant, that "the blood vessels are thereby diminished in calibre, the blood supply to the spinal cord is diminished in amount and its power departs." He was concerned mainly with cases of temporary paralysis, and sought an explanation in irritation of vasomotor nerves innervating blood vessels. *Inter alia*, he made the theory of reflex paralysis apply to the case of paraplegia succeeding labour. About the same time Fussell[27] stated that cows not infrequently suffer from paraplegia after calving, that they lie down, unable to move their hind legs, and apparently have no feeling in them when they are touched. In about a fortnight recovery ensues. Similar phenomena are known to occur in pregnant mares.

Present-day conceptions have widened in range without gaining in precision. Puerperal hemiplegia (inclusive of pre-puerperium cases) includes a rather heterogeneous collection of morbid states. Apart from the ordinary causes (syphilis, cardiac disease, etc.), to which, of course, the pregnant woman as well as any other may be subject, certain processes are apt to develop in connexion with this physiological condition. A review by Duhot[28] informs us that of 46 cases 17 were occasioned by cerebral haemorrhage, youthful though the patient frequently was. Physiological hypertrophy of the left ventricle and increased richness of the blood are thought by themselves to be insufficient, and the additional factor of albuminuria is incriminated. Localized cerebral oedema, rather than haemorrhage, and the local effect of toxicosis ought not, however, to be overlooked. Another variety is meningeal haemorrhage, but its explanation is unfortunately not clear. It may develop in the absence of albuminuria or cardiac disease, or of any evident visceral or toxi-infective process. I may mention an ingenious theory to the effect that increased activity of the suprarenal glands in pregnancy, as disclosed by a condition of hypercholesterinaemia, leads to a rise of blood pressure from time to time, and so to meningeal haemorrhage.

But in other instances thrombosis instead of haemorrhage provides the causation, and its pathogenesis is equally indefinite, unless we fall back on the analogies alluded to above and assume not so much a "reflex" paralysis as one originating in stagnation of viscous blood owing to a weakly acting heart or a low blood pressure. The paraplegia of pregnancy (sometimes called Moxon's paraplegia) may result from a thrombosis of this kind in the long anterior spinal artery.

The physiological peculiarities of pregnancy and the puerperal state deserve more attention from the neurologist. Three cases of epilepsy occurring solely during pregnancy and in the absence of eclampsia have been reported by Curschmann.[29] Amelioration of the characteristic symptoms of myasthenia gravis in the course of pregnancy has long been known but never explained. The evolution of abnormal clinical conditions during a normal physiological process should surely check the misconceptions of those who persist in the habit of making "symptoms" constitute "diseases," and who with equal persistence ignore the physiological nature of the former.

2. Little need be said of *neurosyphilis* in these days, when any suspected case of acute cerebral disorder can be made to run the gauntlet of serological tests and a verdict obtained within a few hours. Clinically, neurosyphilis turns up in unexpected quarters and in unwonted guise. A sudden loss of consciousness with epileptic fits and consequent paresis may be the first indication of incipient general paralysis; an acute hemiplegia or monoplegia may betray an endarteritis syphilitica, or a little-suspected gummatous meningitis; syphilitic cerebral haemorrhage, less well recognized and less often envisaged, should not be overlooked.

Only a week or two ago sudden headache, sickness, malaise, and rise of temperature, followed by right facial weakness and considerable aphasia, led me to diagnose encephalitis in the case of a man of 35; but routine insistence on the tests of the clinical laboratory enabled me next day to correct it to neurosyphilis, with corresponding improvement in the prospects of recovery.

3. A rarer affection is that known as *pachymeningitis haemorrhagica interna*, the pathology of which is explanatory of its somewhat unusual symptoms. Occurring more frequently among those addicted to alcohol than others, it is signalized by intense headache, vomiting, sometimes convulsions, and abrupt loss of consciousness. There is not uncommonly a rise of temperature accompanied by signs of meningeal irritation; a bloody spinal fluid is obtained by puncture, with marked increase of albumin and globulin; smears are always negative and cultures sterile. Recovery ensues, hastened by withdrawal of spinal fluid, but reeurrence of the attacks constitutes the danger. In the cases I have observed myself neurosyphilis was excluded, yet the basis of some recorded instances appears to have been of this nature (Hassin[30]).

Thus on his return home from a city dinner a middle-aged man suddenly fell unconscious on his bedroom carpet, with generalized convulsions and immediate rise of temperature. Meningeal symptoms appeared and a clinical diagnosis of some form of meningitis was made. Only on the fifth day was lumbar puncture resorted to, when a clear fluid of an extraordinary pink-orange-yellow colour was withdrawn. Spectroscopy showed it to be full of haemoglobin derivatives. In view of the history and of the habits of the patient a diagnosis of pachymeningitis haemorrhagica interna was made, and confirmed by the subsequent course of the case.

This example of the condition is almost identical with one reported by Fried.[31] Another instance, however, occurred in a younger man, in whom three separate attacks similar to the above developed at approximate intervals of six months; recovery was much slower after the second, and a fourth was fatal. At necropsy the peculiar stratiform alternation of membranous and haemorrhagic layers over the postero-superior and postero-lateral aspects of the encephalon was at once recognized.

III. In Later Life.

If we assume with some arbitrariness that the fiftieth year of life ushers in a degenerative period, we may expect thereafter acute cerebral affections, of which the commonest symptoms are hemiplegia, aphasia, and hemianopia, and the commonest lesions vascular. Naturally the clinician must not forget the exceptions to the general rule; Bright's disease may bring cerebral disaster in its train long before 50, and families are known that are unhappily distinguished by hereditary apoplexy.

Vascular lesions, then, haemorrhagic or thrombotic, constitute by far the major portion of the cerebral attacks of later years; these should always be regarded as cerebral *traumata*, and treated by rules applicable to lesions of the *vascular* system. Differential criteria between haemorrhage and thrombosis often appear more impressive on paper than during anxious moments at a bedside; diagnosis is reached in numerous instances fully as much by scrutiny of the exact order of events as by consideration of the objective signs. In the subjoined paragraphs an outline is given of the points to weigh before committing oneself to a precise opinion. The condition of the vascular system is at least as significant in this connexion as the nature of the cerebral syndrome.

1. Inquiries directed towards the question of previous attacks may throw a sidelight on the present one. If slight seizures have occurred previously thrombosis is suggested; if a single severe previous attack, either. There may have been thrombosis originally, and haemorrhage now, or vice versa.

2. Asking next for the details of the present illness, the clinician notes that a more or less definite aura and a certain measurable duration for the unfolding of the attack characterize thrombosis, whereas there is little or none of this in the other process. Physical or mental exhaustion precedes thrombosis, it may be, but has little if any bearing on the occurrence of haemorrhage, as has, for that matter, the question of previous excitement. Ernest Jones[32] has shown that quite a proportion of haemorrhage cases (subsequently confirmed) have their onset during rest or sleep. These are points of some moment, for if the ictus is attributable to a combination of special circumstances rather than to severity in degree of vascular change the prognosis as regards recurrence is proportionately better.

3. At the bedside, commencing with the state of the pulse and heart, the examiner concludes that a feeble pulse and weakly acting heart suggest thrombosis; a full and perhaps bounding pulse, with cardiac hypertrophy and a blood pressure above normal for the patient's years, is in favour of haemorrhage. Thickened or tortuous peripheral vessels indicate either, as does the presence of albuminuria demonstrable in catheter specimen or otherwise. Similarly, retinal haemorrhages noted with the ophthalmoscope do not favour one diagnosis rather than the other unless they happen to be severe and massed, in which case they point to cerebral bleeding.

4. Attention is also given to the loss of consciousness. Only if a large vascular area is out of action is unconsciousness likely to accompany thrombosis, whereas the laceration caused by extravasated blood inhibits the cortex, according to some, by irritation of corticipetal systems. Enduring unconsciousness strongly favours haemorrhage: a short initial loss, thrombosis. In basal, pontine, and ventricular cases the mechanism of production of the symptom consists in general (cerebral) vaso-constriction by excitation of a vasomotor control centre in the medulla. Should the obscuration of consciousness, trifling at first, steadily deepen as the hours pass, an ingravescent extravasation is indicated; yet in progressive thrombosis a not dissimilar phenomenon is occasionally remarked. The duration of these is never so prolonged, nor is there the same dubiousness of continuity, as may sometimes be observed in the cases of delayed traumatic apoplexy alluded to above.

5. As for concomitant epileptic seizures, if Jacksonian their repetition manifests a thrombotic process; if generalized, either that or haemorrhage. Since cortical vessels are more prone to the former than the latter the differential value of the symptom is explained.

6. Rise of temperature does not of itself furnish a means of distinguishing. It points to implication of the upper pons and is seen typically in pontine, basilar, and ventricular cases. Its steady and fairly rapid heightening is suggestive of early death.

7. If now the observer turns to other possible localizing indications apart from Jacksonian attacks, during the period of unconsciousness he may readily enough be able to diagnose capsular, pontine, unilateral, or bilateral sites of invasion, but of themselves these do not serve in differentiating between the two chief processes under discussion. The case is rather altered when consciousness returns. He may then be in a position to note that an enduring aphasia favours occlusion, since, as already mentioned, cortical thrombosis is as a fact more frequent than cortical extravasation. Again, hemianopia suggests a similar vascular origin, haemorrhage in the distribution of the posterior cerebral being distinctly rare.

With various interesting phenomena that can be demonstrated during the period of physiological decortication or decerebration (for example, the reflexes of Magnus and de Kleijn) I am not here concerned, as they do not shed light on the nature of the vascular process underlying the neural semeiology.

Since *embolism* may occur at any age, roughly speaking, I have left its consideration to the end. It does not present those difficulties which seem to be inseparable from the other two, except perhaps when the circumstances are unusual. Thus if the practitioner finds a patient with mitral stenosis and a weakly acting heart at the degenerative period, is his acute cerebral lesion embolic or thrombotic? Again, war experiences have shown how traumatic thrombosis of the internal carotid may cause a sudden cerebral attack by detachment therefrom of an embolus (Colledge and Dunn[33]).

When examination reveals a lesion of the vascular system in the emboligenic circulatory area, as it may be called, diagnosis of an acute cerebral ictus without premonitory symptoms can rarely if ever be erroneous. Infective endocarditis can scarcely be overlooked, although a presystolic murmur may be missed and milder endocarditic manifestations disappear.

Concluding reference to the controversial question of *temporary or transient hemiplegias* and other analogous cerebral disorders must of necessity be brief. The reality of these clinical disturbances is, of course, undeniable, but their pathogenesis is in the nature of things likely in most instances to be matter of speculation rather than of proof. Too facilely has acceptance been voted to the theory assigning them to an angiospasm—a transient constriction of a cerebral vessel thought to be itself in a degenerating condition; several weighty considerations militate against this view. (1) Leonard Hill[34] has shown experimentally that the cerebral circulation passively follows changes in general arterial and venous pressure, and is controlled by bulbar centres acting on the general circulatory system. If cerebral arteries are constricted corresponding capillaries become congested with venous blood—not emptied, with resultant local anaemia. (2) The pial network of vessels is so closely interwoven that symptoms from strong and persistent localized cramp in some of its twigs seem improbable, as collateral supply would supplement the arrest (Allbutt). (3) All arteries under the control of vasomotor nerves react to adrenaline by contraction, but the cerebral vessels do not (Florey[35]). (4) The tacit assumption is made that arterio-sclerotic arteries are specially prone to spasm, yet in that state the muscular elements have lost their contractility by undergoing fibrous degeneration. (5) Advocates of the theory of angiospasm do not appear to have faced the difficulty that the local cerebral anaemia of the motor zone which they postulate is unaccompanied by Jacksonian or general epilepsy; yet evidence has collected to demonstrate the association of hyperexcitability with cerebral vascular constriction, even if temporary.

The truth is insufficient attention has been given to the occurrence of microscopic organic lesions as a foundation for the symptom-complex, transient and recurrent, set down to angiospasm (Achard, Foix, and Leblanc,[36] Evans,[37] and others). Again, if a vessel is degenerated transient reduction of general blood pressure may result in a failure to maintain the column of blood against peripheral resistance, or to overcome partial obstruction; hence the development of transient paresis or paralysis from relative ischaemia. I do not doubt, further, that this is the correct explanation of those cases in which transient amaurosis is stated to coincide with observed spasm of retinal vessels (Lundie,[38] Bruner[39]); because of passing hypotension the artery may seem to diminish in calibre and perhaps actually do so, yet of arteriospasm in the strict sense there need be no trace. In fine, other possibilities than angiospasm may legitimately be utilized in the elucidation of transient cerebral attacks; and since this is so the physician need not seek a pathogenesis capable of being applied universally, and should realize the intrinsic variations among them on the clinical side as well.

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THE TREATMENT OF COLLES'S FRACTURE.

BY

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THE admirable short paper by E. D. Grasby and S.-R. Trick in the *British Medical Journal* of March 2nd (p. 391), following upon that of Edwards and Clayton in the *Journal* of January 12th, prompts me to offer a few remarks on the treatment of Colles's fracture.

Colles's fracture is at once the commonest (sharing this distinction with fracture of the clavicle), one of the easiest to treat, and generally the worst treated, of all fractures of the human body.

The first-mentioned paper is "an endeavour to ascertain the causes for the imperfect results that obtain from the usual methods of treatment at present adopted." The principal conclusions arrived at are:

> "1. Colles's fractures without displacement yield uniformly good results, as observed two years after the injury.
> "2. Where displacement was a marked feature of the fracture the results two years after the injury are invariably unsatisfactory.
> "3. The disability was in each case due to osteo-arthritis in the inferior radio-ulnar joint, resulting from incomplete reduction."

From this we must infer that at a great London teaching hospital a Colles's fracture is never properly reduced. For, apparently, when the displacement is not considerable, reduction is not considered necessary, and, when displacement is considerable, the result is invariably unsatisfactory owing to incomplete reduction. We need not, however, infer that the results so candidly reported from this clinic are in any way exceptional. They are indeed the usual results of the methods of treatment at present adopted. I personally never, or hardly ever, see a case of Colles's fracture which has been properly reduced, although many of the cases that I see have had some sort of manipulation previously. The reason for these uniformly bad results is that the method of reduction almost universally employed—namely, that advocated by Sir Robert Jones—is entirely inadequate in the hands of the majority of those who have to treat these cases.

In the classical Colles's fracture—and most cases are of this type—there are three characteristic displacements of the lower fragment of the radius in relation to the upper—namely, (1) displacement upwards and backwards; (2) abduction to the radial side; and (3) rotation about a transverse axis—that is, backward tilting of the lower articular surface, the importance of which is rightly emphasized by Edwards and Clayton. Each of these displacements must be deliberately corrected if a good result is to be obtained.

Colles's fracture is produced by great force—that is, the whole weight of the falling body upon the fixed wrist—and *it requires great force to reduce it*. The reduction of a Colles's fracture is a matter of sheer force; there is no trickery about it whatever.

General surgeons as a rule have no conception of the amount of force that orthopaedic surgeons can, and often do, employ in quite ordinary manipulations, and I think that some orthopaedic surgeons hardly realize it themselves. It may be that the powerful hands of Sir Robert Jones (and some others) can reduce a Colles's fracture in any manner that he chooses; but I am convinced that the method which he advocates is quite inadequate in the hands of the great majority of those who have to deal with Colles's fractures.

For general use there is no method to compare with that of *reduction over a wedge*. By this method the upper fragment is fixed, and the lower fragment is compelled by sheer force to go in whatever directions the operator wishes. Briefly the actual procedure is as follows:

The patient must be fully anaesthetized. Some expert anaesthetists can give gas or gas and oxygen for long periods, and can even obtain muscular relaxation (with luck), but this is quite exceptional. As ordinarily given, "a whiff of gas" is entirely inadequate for the proper reduction of a Colles's fracture. In these circumstances the reduction is always hurried, the patient is usually stiff or moving, and, above all, there is no time for a critical review of the reduction before he comes round, nor for a repetition of the manipulation if it should be found to be incomplete. The reduction should be done deliberately with the patient fully anaesthetized. I think that regional (brachial plexus) anaesthesia might be employed here much more often than it is.

For the manipulation the fracture is laid flexor surface downwards across the wedge,* so that the lower end of the upper fragment rests directly on the wedge. For the right side it is convenient to have the wedge lying on the table by the patient's side; for the left side (unless the surgeon is left-handed) it is more convenient to have it on an outlying small table. The upper fragment is firmly held by the surgeon's left hand on the wedge. The lower fragment is gripped by the surgeon's right hand with the thumb on top and the ball of the thumb directly over the prominence which the displaced lower fragment makes on the dorsum. The lower fragment is now forced downwards and forwards and towards the ulnar side. The amount of force required varies in different cases, but in all cases it is considerable, and I have many times put the whole weight of my body on to this fracture in order to reduce it properly. At the end of this manœuvre the backward tilt of the lower fragment is corrected by a sharp forward flexion movement.

Many surgeons make a point of first disimpacting the fracture by dorsiflexing the wrist and temporarily increasing the deformity. This is harmless, but unnecessary. The only objection to it is that it is apt to make a surgeon think that he can reduce the fracture by some clever manœuvre instead of by force. In reducing over a wedge disimpaction occurs just as readily as soon as the lower fragment is made to move, and then all that is necessary is to force the fragment into its proper position.

After the reduction the fracture should be critically examined. The positions of the styloid processes should be noted and compared with the normal. The prominence on the dorsum should be felt for, to make sure that it has quite disappeared, and it should be seen that the forward concavity of the lower end of the radius is restored. Lastly, the position of the hand as it hangs freely in relation to the lower end of the radius should be noted. If any part of the deformity remains uncorrected, the manipulation should be repeated.

There is very little tendency for the deformity to recur after a Colles's fracture has been properly reduced, unless the wrist is dorsiflexed, or the splint which is applied presses the lower end of the radius backwards.

The popular Carr's splint, as originally designed and as supplied to general practitioners and commonly used by them, is a bad splint, because it presents a flat surface to the normal forward concavity of the lower end of the radius and so causes the lower fragment to be tilted backwards. As padded up and applied by experts it is, no doubt, quite efficient, but then it is no longer a "Carr's splint."

* The so-called orthopaedic wedge is merely a short round horizontal bar covered with rubber, standing about four inches high on a firm base. For those who want one occasionally and have not got one, I may add that an ordinary flat iron, borrowed from the kitchen, with its round horizontal handle covered with a folded towel or other soft material, makes a perfectly good "orthopaedic wedge."

Colles's fracture should be put up with the wrist moderately flexed. The best position is that in which the hand hangs naturally when it is unsupported and the muscles are relaxed under the anaesthetic. No splint is more efficient or more comfortable than a plaster strip moulded to the flexor surface of the forearm and hand, leaving the fingers free.

The proper use of plaster-of-Paris requires a little practice, but I would submit that the putting up of a Colles's fracture in plaster is within the capacity of any practitioner; it requires less special knowledge and skill than the alteration of an unsuitable splint in order to make it suitable.

An assistant supports the elbow and steadies the limb by making light traction downwards and forwards on the middle fingers. The part is wrapped in a layer of cotton-wool over which an ordinary bandage is applied firmly, but not tightly. A four-inch plaster bandage is placed in warm water, and, when bubbles have ceased to rise, it is lightly squeezed and then applied evenly round and round the limb from the elbow to the middle of the hand. Three or four bandages are applied in like manner, and as soon as the plaster is set it is cut up each side with a sharp scalpel, and the top or dorsal half is removed. The lower half remains as the splint, and it is kept on with an ordinary bandage.

It has been suggested that this fracture should be put up with the forearm supinated, as is usually done with other fractures of the radius and ulna. But the supinated position is much more irksome to the patient, and I doubt whether it is really necessary in this case. Colles's fracture is produced by a fall on the pronated hand and it is impacted in the pronated position. In reducing it by the method described the lower fragment is forced back into its original—that is, normal—position in relation to the upper fragment, and if it is allowed to heal in this position normal movements should follow.

Massage and movements of the fingers are usually begun a day or two after the reduction, and movements of the wrist-joint in about ten days to a fortnight. But these times are of little importance as compared with the complete reduction of the deformity.

In conclusion, is it too much to hope that surgeons in charge of fracture departments allow their house-surgeons and dressers not merely to watch, but actually to do these manipulations with their own hands? Outside the immediate vicinity of large hospitals the great majority of Colles's fractures will be and must be treated by general practitioners, and the actual reduction of a few of these fractures under supervision is worth more to the future practitioner than all the demonstration that can be given.

VALUE OF THE HINTON TEST IN THE SERUM DIAGNOSIS OF SYPHILIS

IN COMPARISON WITH THE KAHN AND WASSERMANN REACTIONS.

BY

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HAVING seen with interest the results of the new Hinton test as applied in the Wassermann Laboratory of the Harvard Medical School and in the pathological laboratory of the Massachusetts General Hospital, Boston, U.S.A., and been fired with Dr. Hinton's enthusiasm during a personal demonstration and discussion of his test, we decided to examine it in a comparative manner with our routine "Wassermann" specimens from the Somerset Hospital, the Peninsula Maternity Hospital, and, in a special series of cases through the kindness and courtesy of Dr. C. Kevin O'Malley, from the venereal disease clinics of the Health Department of Cape Town. One of us (J. H. F.) is responsible for the Hinton tests, the other (E. C. G.) for the Kahn and Wassermann reactions.

THE HINTON TEST.

Our basis for the test is the technique used by Dr. Hinton in June, 1928, which embodies some important modifications (then unpublished) of his original test as appearing in the *Boston Medical and Surgical Journal* of June 16th, 1927 (pp. 993–996).[1] We have used the test with this technique throughout, and have also subjected the procedures to critical experimentation and study, as will appear in the sequel.

The details of the Hinton test, as we have it in a personally annotated reprint with Dr. Hinton's own unpublished modifications (to June, 1928), are briefly set forth as follows:

The test is an "agglutination," by syphilitic serums, of a suspension of cholesterol in *glycerinated* hypertonic saline containing a mere trace of the alcohol-soluble, ether-insoluble extractives of beef muscle. The addition of the glycerol is the main feature of difference from the Kahn, the Sachs-Georgi, Sigma, Meinecke, and other "flocculation" methods of diagnosing syphilitic serums.

Preparation of Reagents.

The "antigen" or "indicator" is prepared from beef muscle (preferred by Hinton to beef heart). The method follows that described by Neymann and Gager,[6] and by Kahn.[2] A small quantity, say 1/2 lb., is freed from fat and connective tissue, chopped and minced, and dried for four or five days on a tray in an oven with a thermostat set at 55° C. It is then powdered, and extracted by vigorous hand-shaking in a stoppered graduate, using ether in the proportion of 1 gram of powder to 4 c.cm. of ether. The process is repeated four or five times until the ether comes away clear, and the residue collected on filter paper and dried. It is then extracted in a glass-stoppered bottle with 95 per cent. alcohol in the proportion of 1 gram of dried residue to 5 c.cm. of alcohol. Extraction is continued for three days at room temperature, and the "indicator" ("antigen") is then filtered off. To every 1 c.cm. of extract is now added 9 c.cm. of a 0.7 per cent. solution of cholesterol in absolute alcohol (prepared several days previously).

The "stock indicator," as Hinton calls it, keeps indefinitely in stoppered bottles of 50 to 100 c.cm. capacity in a dark cupboard at room temperature. The "indicator" actually used for the test is a glycerinated suspension of the cholesterolized antigen *freshly* made up with sodium chloride solution on the day it is to be used. Hinton now makes up a 3 per cent. as well as a 5 per cent. sodium chloride suspension. Two parts of the 5 per cent. (or 3 per cent.) NaCl are added to one part of "stock indicator" pipetted with a clean dry 5 or 10 c.cm. pipette into a 100 c.cm. stoppered graduate. This is shaken vigorously and left for half an hour. Twelve parts of saline are added, the suspension is shaken, and finally, after adding fifteen parts of 50 per cent. glycerol, again shaken thoroughly.

Hinton finds it unnecessary to "inactivate" the serum to be tested, but where routine Wassermann tests are being done it will have been "decomplementized" by heating to 55° C. for half an hour.

The test is carried out in three 10 mm. and 100 mm. (serum) tubes conveniently held in a numbered (Wassermann) rack. This should be of brass and have three shelves to stand immersion without upsetting the serum tubes.

To Tube 1 is added 0.1 c.cm. of serum and 0.5 c.cm. of 5 per cent. NaCl suspension.
To Tube 2 is added 0.3 c.cm. of serum and 0.5 c.cm. of 3 per cent. NaCl suspension.
To Tube 3 is added 0.5 c.cm. of serum and 0.5 c.cm. of 3 per cent. NaCl suspension.

The tubes are shaken thoroughly and placed in a shallow water-bath at 37° C. for six to sixteen hours. The test needs about 1 c.cm. of serum, and the quantities are easy to pipette.

A positive reading consists in a definite "agglutination" of the cholesterol suspension into more or less coarse clumps, with a complete clearing of the medium. A good positive reading in at least one tube (generally the first) constitutes a positive diagnosis of syphilis.

Modifications of Technique.

As a result of our experimentation with the test we submit the following conclusions and modifications of the technique:

1. The saline emulsion of our antigen* when made up with 5 per cent. NaCl is slightly too unstable, tending to "auto-agglutinate," whereas the 3 per cent. NaCl suspension is definitely too stable and too "inert," giving few positives. We found that a 4 per cent. NaCl-glycerol suspension gave uniformly better results, without the needlessly extensive range of sensitiveness intended with the more complicated two-dilutions technique.

* Antigen preparations would appear to vary slightly in sensitivity, as we have noticed in using different batches of antigen.

2. The suspension becomes most sensitive if allowed to stand for half to three-quarters of an hour before use.
3. The 4 per cent. NaCl suspension is added in 0.5 c.cm. amounts to each of the three tubes containing respectively 0.1, 0.3, and 0.5 c.cm. (or 0.1, 0.2, and 0.4 c.cm.) of "inactivated" serum. We use a 20 c.cm. burette graduated in one-twentieths of a cubic centimetre, and find that this makes the addition of 0.5 c.cm. of the suspension to a large series of tubes a rapid and accurate process.
4. To ensure thorough mixing, each tube is shaken with the mouth held loosely between the thumb and forefinger (one tube in each hand); and a rackful of tubes may be shaken by hand in this way with remarkably little trouble and loss of time.
5. Keeping the tubes overnight in the water-bath or incubator at 37° gives the clearest readings. (This would seem to be indispensable, as with a room temperature of 22° to 26° unreliable results were obtained, and preliminary incubation at 55° C. for half an hour to an hour did not improve these results.)

Modified in this way the readings are for the most part clear-cut. Zone phenomena are infrequent and obvious.

Pseudo-Reactions.

A pseudo-reaction is sometimes obtained. For the most part this consists of a fine even flocculation, evident in all three tubes, and tending to be most marked in the tube with the largest amount of serum. On a few occasions this was quite confusing with our use of Hinton's "two-strength" technique, but the fact that there was not much pseudo-agglutination in the 0.1 c.cm. tube caused us to suspect the result in every case. With the 4 per cent. suspension these pseudo-reactions are much less marked and have never given the slightest trouble in reading in 114 cases (vide infra). Hinton emphasizes the clarity of the fluid in which the flocculi float in the case of the true as contrasted with the pseudo-reaction. It may be said that these pseudo-reactions are of slight practical importance and give little or no trouble after a short experience with the tests. Pseudo-reactions, it must be remembered, complicate the Kahn and other techniques, and even the Wassermann reaction is not wholly free from difficulties in reading. As to the validity of the test, Dr. Hinton is, to our certain knowledge, bringing out data from a very large number of observations, and our results support his personally expressed contentions fairly well.

THE KAHN REACTION.

R. L. Kahn, in 1921, appreciating that the "precipitate" in the heterophilic flocculation tests for syphilitic serums was lipoidal in character, as contrasted with the serum globulins in specific immune precipitations, was led to study the variable factors in the reaction, and to evolve a method of stabilizing the conditions of flocculation (precipitation). This method involves:

1. Choice of highly unstable antigen-saline suspension.
2. Optimum concentration of ingredients.
3. Quantitative relation between antigen suspension and serum.
4. Agitation to bring forth the precipitate, especially in weak serums.

The antigen is an alcoholic extract of dried beef heart from which the ether-soluble "non-reactive" extractives have been removed by a careful method of extraction based upon that of Neymann and Gager[6]; 0.6 per cent. of cholesterol is added as experiments indicate that this is the optimum. The optimal amount of saline to add to the cholesterinized antigen is determined by a preliminary antigen titration in which varying quantities of 0.85 per cent. NaCl are added in a standard manner, and note taken of the solubility of the precipitate on the further addition of "test" quantities of saline. The antigen saline proportion we found to be the optimal averaged 1:1, and this is made up ten minutes before the test. We took this titre to indicate correct sensitivity as we had no standard antigen for control-standardizing purposes.

The test proper is conducted with heated serum (56° C. for half an hour being the standard). To 0.05, 0.025, and 0.0125 c.cm. of antigen dilution in agglutination tubes in a suitable (Sigma) rack are added 0.15 c.cm. amounts of heated undiluted serum. We used thorough shaking, by hand, for three minutes to facilitate the reaction. No addition of saline (as recommended by Kahn) was found necessary to make readings clearer. We noted, however, that clear-cut reactions were not immediate, and indeed several hours were necessary before the routine readings could be taken. This led to our leaving the racks at room temperature overnight and reading them along with the Hinton reactions next morning. We consider that this delayed reaction might indicate some lack of sensitivity in our antigen suspension, but conclude that, all other details agreeing with the standard Kahn routine technique, our late (eighteen-hour) readings may be taken as reliable.

Pseudo-reactions were noted in a few cases and were apt to be confusing; our eighteen-hour readings, however, were, on the whole, clear-cut and easy to read. The question of the validity of the results, and the possibility of "false positives," may be referred to a consideration of our tables, and to the experience of other workers.[7] We used cerebro-spinal fluids without the preliminary preparation advocated by Kahn, so as to compare with the Hinton and Wassermann tests. We conclude from our limited observations that this led to very inferior results.

THE WASSERMANN REACTION.

We have employed as a routine the No. 4 method of the Medical Research Committee's Special Report Series No. 14 (1918),[4] which is a standardized method calculated to yield results, both positive and negative, of the highest degree of validity and reliability.[5] Our complement minimum haemolytic dose averaged 1 in 30; and the minimum haemolytic dose of the haemolytic immune body 1 in 1,500.

The serums delivered to us were not always satisfactory, and a number had to be refused on account of haemolysis, gross turbidity, etc. Certain serums with a definite degree of haemolysis were put up and often gave definite reactions. Such of these as were controlled by a subsequent test we have thought fit to include in our series. Anticomplementary serums were ignored, but it is to be noted that in a number of these the Hinton and Kahn tests gave good positives. Wassermann readings were taken immediately after removal of the racks from the water-bath, as it was found that standing even for a short time at room temperature furthered haemolysis and was apt to change weakly positive tubes to negatives (complete haemolysis). Our series of 612 cases includes some 30 odd repeat observations.

TABLE I.—In a comparison of the Hinton and Wassermann tests 612 examinations gave:

Complete agreement in 551 cases (90 per cent.)—	
Both tests negative	384
Both tests positive	167
Doubtful agreement in 15 cases (2.5 per cent.)—	
Hinton negative, Wassermann weak	4
Hinton positive, Wassermann weak	8
Hinton weak, Wassermann negative	3
Disagreement in 46 cases (7.5 per cent.)—	
Hinton positive, Wassermann negative	34
Hinton negative, Wassermann positive	12

TABLE II.—In 460 of these cases, in which the Kahn test was also performed, the Hinton compares with the Wassermann as follows:

Complete agreement in 420 cases (91.3 per cent.)—	
Hinton and Wassermann negative	298
Hinton and Wassermann positive	122
Doubtful agreement in 4 cases (0.9 per cent.)—	
Hinton negative, Wassermann weak	4
Disagreement in 36 cases (7.8 per cent.)—	
Hinton positive, Wassermann negative	31
Hinton negative, Wassermann positive	5

TABLE III.—In a comparison of the Kahn and Wassermann tests in this series of 460 cases we get:

Complete agreement in 428 cases (93 per cent.)—	
Both tests negative	310
Both tests positive	118
Doubtful agreement in 8 cases (1.7 per cent.)—	
Kahn weak, Wassermann negative	4
Kahn negative, Wassermann weak	3
Kahn positive, Wassermann weak	1
Disagreement in 24 cases (5.3 per cent.)—	
Kahn positive, Wassermann negative	15
Kahn negative, Wassermann positive	9

TABLE IV.—Comparing the Hinton and Kahn tests we have:

Complete agreement in 425 cases (92.4 per cent.)—	
Both tests negative	297
Both tests positive	128
Doubtful agreement in 4 cases (0.9 per cent.)—	
Hinton negative, Kahn weak	4
Disagreement in 31 cases (6.7 per cent.)—	
Hinton negative, Kahn positive	6
Hinton positive, Kahn negative	25

TABLE V.—Comparing the three tests for these 460 cases, we have:

Complete agreement in 407 cases (88.5 per cent.)—	
All three tests negative	290
All three tests positive	117
Doubtful agreement in 8 cases (1.7 per cent.)—	
Hinton and Wassermann negative, Kahn weak ...	4
Hinton and Kahn negative, Wassermann weak ...	3
Hinton negative, Kahn and Wassermann weak ...	1
Disagreement in 45 cases (9.8 per cent.)—	
Hinton and Kahn negative, Wassermann positive	4
Hinton negative, Kahn moderately positive, Wassermann positive	1
Hinton and Wassermann negative, Kahn positive	4
Hinton and Kahn positive, Wassermann negative...	11
Hinton positive, Wassermann and Kahn negative...	20
Hinton and Wassermann positive, Kahn negative	5

DISCUSSION.

Comparing these tables, we note that the Hinton and Kahn tests agree fairly closely with the Wassermann reaction, the Kahn slightly more closely than the Hinton. To evaluate the small differences would necessitate clinical data to supplement the serological findings. Satisfactory clinical data were not obtainable in our present series, and we are now at work on a smaller series of selected cases with a view to obtaining a correlation of serological findings with reliable clinical evidence. These results, together with further investigations relating to the fundamental principles underlying the Hinton test, we hope to publish in due course.

We may note in our present series, however, that the Hinton test gives more "positives" than either the Kahn or the Wassermann, and this means either that the test is more sensitive or that it gives a greater number of "false positives." The Kahn also gives a slightly greater number of positives than the Wassermann, and a number of authorities feel that the question of "false positives" with the Kahn calls for some hesitancy in accepting the result in the individual case.[8] It is agreed that false positive Wassermann reactions are very rare under the standardized conditions of the No. 4 method. A ±, and even a + Wassermann, however, demands a repeat, and perhaps a provocative injection of salvarsan, if the clinical evidence of syphilis is insufficient. We have one or two + and − Wassermann reactions, with a negative Hinton, that would need this corroboration of the Wassermann result.

The Hinton test, in our opinion, gives more "false positives" than the Wassermann, but probably (as far as our evidence goes) fewer than the Kahn. This is advanced tentatively, especially in view of the criticisms of our Kahn technique which we have offered above. On the other hand, we feel strongly, on the evidence of a number of the cases having highly suspicious histories, and sometimes giving a positive Kahn reaction also, and occasionally a positive Wassermann on repetition, that the majority of positive Hinton reactions (where the Wassermann is negative) do denote a greater sensitivity of the flocculation test. In the noticeably small number of cases—namely, 5 in our smaller series, and 12 in the larger series—where the Wassermann reaction is positive and the Hinton negative, such evidence as we can command suggests that the inconclusive nature of the ± or + single Wassermann must be considered, as well as the alternative explanation that the Hinton "misses" these cases—that is, gives false negatives. In only two cases, both admitting of doubt, from the incompleteness of the Kahn in one and of the Wassermann in the other, did a positive Kahn accompany a positive Wassermann and the Hinton "miss." Tables I and II, unfortunately, are not comparable on these points, as the Kahn was not performed in quite a proportion of the interesting cases.

With regard to our modification of the Hinton test, we may note that the 4 per cent. NaCl-glycerol indicator was applied to 114 specimens simultaneously with Hinton's "two-strength" indicator, and a greater sensitivity was observed in practically every one of the 36 positives. There were no qualitative differences, save that in two cases with a marked pseudo-reaction in the original Hinton test we obtained a slighter and more easily recognized and discounted reaction with the 4 per cent. suspension.

Our larger series includes 45 cerebro-spinal fluids which give the following comparison:

TABLE VI.

	Hinton Test.		Wassermann Test.
36 cases	negative	.....	negative
1 case	positive	.....	positive
1 ,, ...	weak positive	.....	positive
1 ,, ...	positive	.....	weak positive
1 ,, ...	negative	.....	weak positive
3 cases	negative	.....	positive
2 ,, ...	positive	.....	negative

These few cases rather suggest that the Hinton test is not quite so sensitive with cerebro-spinal fluids, especially as the serums from two of the three cases with positive Wassermann and negative Hinton reactions gave a positive with both tests. The same is true of both of the weakly positive Wassermann reactions. Concerning this point we hope to furnish further evidence at a later date.

The Kahn test, incidentally, was done on 28 of these cerebro-spinal fluids (without the preliminary "concentration" advocated by Kahn), without a single positive result, although including one with both Wassermann and Hinton positive, and two with positive Wassermann and negative Hinton, and one weakly positive Wassermann and negative Hinton, and one with positive Hinton and negative Wassermann. Kahn advocates a preliminary concentration of the precipitating factor in cerebro-spinal fluids by globulin precipitation. Our meagre results would suggest that this is an essential step, and worthy of trial with the Hinton test also.

CONCLUSION.

We have in the Hinton test, especially with the authors' slight modification, a very economical, simple, and highly sensitive test for syphilitic serums. There are indications that the test is somewhat more sensitive and more reliable than the Kahn test. It is a further step towards evolving a simple flocculation technique for routine use. We do not hold that the Hinton test is comparable in reliability with a carefully standardized Wassermann technique, such as the Medical Research Committee's No. 4 method, but it would appear to pick out certain types of cases, especially "treated" cases and the controversial "latent" cases, when the Wassermann test at times fails. In the absence of other evidence, however, one cannot feel that a diagnosis of syphilis is to be made on the Hinton (or for that matter any flocculation reaction) alone, whereas a repeated good positive Wassermann reaction does appear to have that significance.

In short the Hinton, like the Kahn, etc., must be reserved as a supplementary test to the Wassermann. It may be used with the same reserve as applies to other flocculation methods: (*a*) where Wassermann facilities are inadequate or not sufficiently organized (for example, in young countries), or (*b*) in hospitals *as a valuable routine on all cases*, to suggest when a further blood sample should be submitted to the central Wassermann laboratory. Difficulties with pseudo-reactions and false positives still weigh against its use by the general practitioner removed from the convenience of a handy serological laboratory.

We desire to express our appreciation of the interest and advice of Professor William Campbell, through whose courtesy we are enabled to publish these investigations.

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THE CERVICAL SYMPATHETIC AND ITS RELATION TO THE THYROID GLAND IN EXOPHTHALMIC GOITRE.

BY

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IN this country theories as to the causation of exophthalmic goitre have principally been focused on the thyroid gland, and as a result of such hypothetical basis for the disease operative treatment has been almost entirely directed towards this structure. On the other hand, a very cursory review of the literature of the etiology of this disease, especially from Continental and American sources, demonstrates the fact that in the minds of a very large proportion of investigators an explanation based on a morbid change in the thyroid alone is inadequate to account for the complex phenomena of the disease, and accordingly many theories have been propounded introducing a neurogenic or toxico-neurogenic factor.

Surgery has followed up this reasoning by attempting to effect a cure through extirpation of presumably diseased nervous pathways of the cervical sympathetic system. What, briefly, are the results of surgical intervention directed towards two totally different anatomical structures? Since the commencement of the present century a large series of operations for exophthalmic goitre have been carried out both on the sympathetic and the thyroid; and the outcome of both procedures has been a reasonable proportion of absolute cures or of cases where there has been pronounced amelioration of the symptoms. In order to exemplify briefly this point the following observations may be cited.

Chalier in 1926 reported a series of nineteen cases of cervical sympathectomy for toxic goitre. The end-results will be seen from the following table.

Cured	3
Greatly improved	9
Slightly improved	6
Recurring	1

During the past few months I selected at random a series of eleven cases of exophthalmic goitre all of which had undergone partial thyroidectomy or ligation of the thyroid vessels, and visited the patients personally in their homes. Their condition as shown in the table below is assessed on such cardinal symptoms as exophthalmos, tremor, pulse rate, nervous irritability, digestion, weight, and general well-being.

Cured (7 years 1; 3 years 1; 2 years 1; 1 year 1*)	4
Unchanged (5 years 1*; 2 years 1; 1 year 1; 6 months 1*)	4
Improved (1 year 1; 9 months 1)	2
Dead (four years later from phthisis)	1

An asterisk indicates that the patients had undergone ligation.
The patient who died showed no improvement before death.

Allowing for spontaneous cures one absolute fact emerges, and that is that the syndrome of exophthalmic goitre can be definitely relieved or absolutely cured by either (*a*) extirpation of a considerable portion of the thyroid gland, or (*b*) excision of the right and left superior cervical sympathetic ganglia and as much of the cervical sympathetic cord as will embrace the variably present middle ganglion.

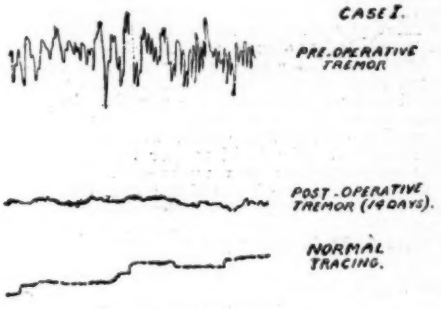
The preliminary results of an investigation of the neuroglandular etiological relations may now be discussed under two headings—clinical and anatomical.

CLINICAL.

Two cases of exophthalmic goitre have been subjected to the operation of cervical sympathectomy, and in each case there was an exhaustive examination before and after operation.

CASE I.

A woman, aged 62½ years, was taken ill in 1921 with asthenia and palpitation. A few months later exophthalmos developed, and enlargement of the thyroid gland was noticed by her friends. It was further observed that the gland varied in size from time to time; when it was especially prominent the neck was painful. Despite medicinal treatment her condition deteriorated, and she was admitted to hospital on June 8th, 1926. On admission she presented a nervous and emaciated appearance; she weighed 99 lb. The thyroid gland showed diffuse hypertrophy of right and left lobes, with a small adenoma of the isthmus. Exophthalmos was bilateral, and was present to a marked degree; measurement of the globar projection on the micrometer scale was 50 + 2. The pronounced tremor of both hands is indicated in the accompanying illustration. The basal metabolic rate determined by the Douglas bag and Haldane apparatus was + 44 per cent. (The patient had been many weeks in bed, and samples were collected after twelve-hour fasts.) In the adrenaline tolerance test 5 mm. of 1 in 1,000 solution produced a rise of brachial pressure of 2 mm. of mercury and 43 beats per minute.



Heart.—Severe auricular fibrillation was present; the apex beat was highly irregular. There was no bruit; the pulse rate was 104 per minute.

Electro-cardiograph.—Lead I: Extrasystoles, R.V., 1. Lead II: Rate, A. 480; V. 120. Rhythm irregular.

Bowels frequency:			
Day (6 a.m. to 10 p.m.)	1	1	1
Night (10 p.m. to 6 a.m.)	0	0	0
Micturition frequency:			
Day	5	6	5
Night	1	1	1

The knee-jerks were very sluggish. Pressure pain over the thenar region was produced by 2.5 kilos.

The patient was treated by *x* rays and digitalis, but the result was negligible, and there was pronounced increase of the nervous instability. At an operation on August 21st, 1926, the right and left superior cervical sympathetic ganglia and both cervical cords as far as the inferior ganglia were excised. The operation was conducted under gas and oxygen anaesthesia; there was a rise of the radial pulse of 6 per minute; both pupils were contracted, and enophthalmos was easily observed.

During the first few days after operation there was severe auricular fibrillation, which was controlled by digitalis. The exophthalmos steadily returned to the pre-operative condition. The micrometer reading was 50, and after seven days the basal metabolic rate was reduced by 13 per cent. The tremor showed decided diminution in frequency and amplitude of cycles. Neck measurements before and after the operation were as follows:

	August 26th.	September 28th.
Trans-cricoid plane	30 cm.	30 cm.
Mid-crico-manubrial plane ...	32 ,, ...	31 ,,
Supramanubrial plane	34 ,, ...	33 ,,

The pressure pain and adrenaline tolerance were unchanged.

Re-examination, August 27th, 1927.—Her condition shows a steady improvement up to this date; she has gained in weight and feels stronger. The exophthalmos has slightly improved, tremor is practically negligible except when overtired or worried. Prior to operation her writing was illegible; it is now clear with no suggestion of vibration. Pulse 80 to 90; she still has attacks of palpitation. The thyroid shows no change in the size of the lateral lobes. The adenoma has now become cystic and slightly larger.

Re-examination, May 25th, 1928.—She has had a recent attack of influenza and much mental worry. Tremor has returned within the past fourteen days; her handwriting is legible though extremely shaky; the weight has considerably decreased; the radial pulse is 90 per minute; heart-beat very irregular; neck measurements show a pronounced diminution in the size of the thyroid; circumferences were as follows: trans-cricoid plane 28 cm.; mid-crico-manubrial plane 30 cm.; supramanubrial plane 33 cm.

Exophthalmos was still very pronounced, and certainly more so than on the last previous visit.

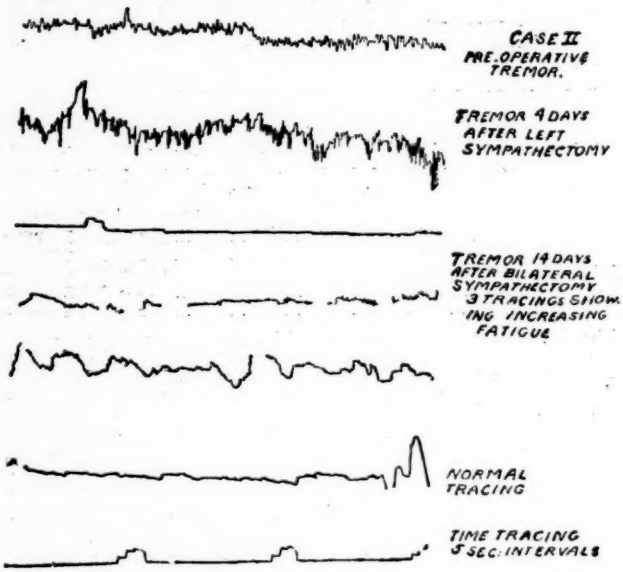
CASE II.

A man, aged 31, with a history of cyclical nervous instability, with early onset of hand tremor, loss of weight, and nervous irritability. Three years after the appearance of the initial symptoms enlargement of the thyroid gland was noted. Eighteen months later exophthalmos developed, and six months after this severe attacks of palpitation occurred. On December 8th, 1927, the right and left superior thyroid vessels were ligatured; iodine was administered and the patient was sent home on December 18th. Following this he lost 23 lb. in six weeks during a severe exacerbation of all the symptoms. He was readmitted to hospital on January 30th, 1928. On examination he weighed 7 st. 4¾ lb. (his normal weight was 11 st.). Exophthalmos was present in both eyes, principally due to pronounced spastic retraction of the eyelids, especially the outer part of the superior lid; there was slight oedema of the lower lids. There was diffuse enlargement of the entire thyroid gland; it was pulsatile with audible bruit.

Circumferences of the neck were as follows: cricoid plane 36 cm.; mid-crico-manubrial plane 40 cm.; supramanubrial plane 43 cm.

The tremor was of the rapid fibrillary type with a rhythm of eight cycles per second. There was slight dilatation of the right side of the heart and auricular fibrillation. Pulse 101. The basal metabolic rate, estimated by the Douglas bag and Haldane apparatus, was + 75 per cent. Pressure pain was 10.5 kilos over the thenar region. In the adrenaline tolerance test 5 mm. of a 1 in 1,000 dilution produced a rise of 25 mm. of mercury in the blood pressure and an increase of pulse rate to 112. There was a generalized faint pigmentation and alopecia of the face and scalp. His bowels acted twice during the day and not at all in the night, and he passed water two to four times in the daytime.

On February 29th resection of the left cervical sympathetic cord was performed without disturbing the ganglia. Immediately after the operation there was a pronounced increase in tremor and rhythmical motion of the whole arm, with a frequency of three cycles in five seconds. The hand tremor increased ten cycles per second. The exophthalmos was unchanged. There was hyperidrosis of the right side of the face; the left side was dry. Immediately after operation the temperature was 99° F., the pulse 128, and the respirations 24. After five days the corresponding figures were 98.4° F., 118, and 22.


CASE II
PRE-OPERATIVE TREMOR.
TREMOR 4 DAYS AFTER LEFT SYMPATHECTOMY
TREMOR 14 DAYS AFTER BILATERAL SYMPATHECTOMY
3 TRACINGS SHOWING INCREASING FATIGUE
NORMAL TRACING
TIME TRACING 5 SEC. INTERVALS

On March 7th, 1928, excision of the right superior sympathetic ganglion and a portion of the cord was performed. Following a transitory febrile period due to tonsillitis the hand tremor subsided markedly, the recording lever remaining stationary for considerable intervals, with an occasional slow rhythm of four or five cycles per five seconds. There was pronounced diminution in the spastic retraction of the eyelids.

On March 20th the basal metabolic rate was + 32 per cent., a fall of about 40 per cent. The adrenaline tolerance test showed a rise of blood pressure of 10 mm. of mercury, with no increase in the pulse rate. The pressure pain figure on the right side was 9 kilos; on the left 8 kilos.

Re-examination, May 23rd, 1928.—The patient appeared to be very well and had gained weight; on May 14th he weighed 8 st. 4 lb. Hand tremor was negligible. The exophthalmic appearance was greatly improved. He had no attacks of palpitation; pulse rate 88.

From a study of the data of the foregoing cases the following points may be deduced.

1. That in cases of exophthalmic goitre extirpation of the cervical sympathetic ganglia has a threefold effect on the syndrome of the disease: (*a*) an immediate phase of increase in all the symptoms, due probably to augmented thyroid activity; (*b*) followed quickly by the first improvement phase, in which there is a considerable fall in the basal metabolic rate and a diminution of hand tremor; (*c*) a second improvement phase sets in after a month or more in which there is a general amelioration of all the symptoms. It is the variability of the degree to which this latter improvement progresses that determines the question of ultimate success of the operation.

2. The effect of sympathectomy on the exophthalmic appearance is apparently uncertain. If the appearance is due to spastic retraction of the eyelids as in Case ii, then sympathectomy effects an improvement. On the other hand, where the appearance is due to the projection of the ocular globe as a whole sympathectomy has little or no effect. It is interesting to note here an observation made *post mortem* on an exophthalmic eye. After death there was still decided ocular prominence, and incision of the conjunctiva and examination of the orbital contents showed the forward displacement to be due entirely to the accumulation of a considerable quantity of clear fluid.

3. The effect of sympathectomy on the thyroid gland in Case i produced post-operative increase in the size of the adenoma and shrinkage and atrophy after some months. In Case ii the size and tension of the thyroid diminished from the onset of the first improvement phase.

Floresco, Missirolli, and Wiener found that section of the cervical sympathetic excited transitory thyroid hyperfunction, followed by rapid atrophy of the thyroid gland, an observation which provides us with an explanation of the post-operative crises and the changes in the size of the thyroid.

4. In weighing the foregoing results it will be remembered that Case i had had prolonged radiation and Case ii ligation of the superior thyroid vessels, and both had undergone a course of iodine treatment, the results of which procedures had been negligible at the time of sympathectomy, at which period they were judged grave operative risks. The inadequate ultimate results in Case i led to a closer investigation of the anatomical connexions between the sympathetic and the thyroid glands.

5. In each case histological examination of the extirpated ganglia revealed the following changes: granular degeneration or atrophy of the nerve cells, increase of connective tissue, and hyperpigmentation comparable to the changes described by Wilson and Durante of the Mayo Clinic.

In conclusion a few words may be added as to the practical aspects of the sympathetic operations for this disease. As far as one can say at present they are not a cure, but nevertheless, if successfully carried out, they produce a very considerable improvement. This amelioration is considerably greater than that obtained by ligaturing the blood vessels, and since the technique is no more difficult, and the risks are not more hazardous, it seems a reasonable proposition to undertake it in cases where the symptoms are of such a degree of severity as would contraindicate a partial lobectomy, thereby obtaining a margin of improvement which would permit this operation to be performed at a later stage.

Again, this operation would appear to be eminently suitable in cases where the cardiac derangement is too serious to allow any thyroid operation to be contemplated, and where the thyro-toxic symptoms are progressive despite medicinal treatment and therefore endanger life, as in Case i.

ANATOMICAL.

According to Berkeley, Crissafulli, and Rhinehart, and further quoted by Wilson and Durante, the superior and middle cervical sympathetic ganglia furnish the entire nerve supply to the thyroid gland.

It is obvious that if this statement is accepted the operation of sympathectomy need only embrace these two ganglia on both sides in order to effect a complete denervation of the gland. Such is the operation usually practised, and such was the technique in the cases investigated personally. The measure of success for this procedure has been fully discussed; that this should be incomplete at once suggests an inadequate denervation, hence a most careful investigation of the nerve supply from the inferior cervical ganglion has been carried out.

In all, six adult bodies and five foetuses have been examined. In every case a communication was found to exist between this ganglion and the thyroid gland on both sides of the neck; it was variable in its position and anatomical course. The following are the chief variations.

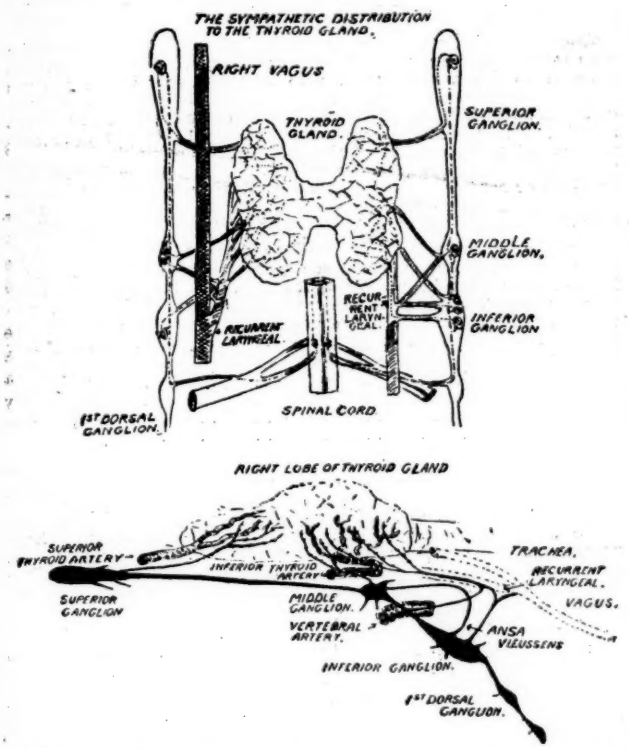
1. The communication may arise either as one or two delicate nerves from the inferior cervical ganglion. On the *left side*, after passing inwards and downwards a short distance, it doubles back along the course of the recurrent laryngeal nerve to be distributed to the postero-inferior aspect of the lower pole of the left lobe of the thyroid. On the *right side* this filament (or filaments) frequently anastomoses with the right recurrent laryngeal nerve at a distance of about 1 to 2 cm. from the origin of the nerve from the vagus, after which the fibre may be traced as a distinct fasciculus on the lower and inner surface of that nerve, and leaves it as a plexus of delicate filaments

to be distributed to the corresponding aspect of the right lower pole.

2. The communication may arise as a branch from the sympathetic cord between the middle and inferior ganglia, in which case the ultimate distribution is the same as in the previous instance.

3. On the left side there may be several small filaments arising from the inferior and middle cervical ganglia, which pass inwards and downwards closely associated with the vertebral artery and reach the left recurrent nerve, when they are distributed both upwards and downwards in that nerve; those fibres passing towards the head may be partly traced into branches to the thyroid gland.

These communicating fibres to the recurrent laryngeal are indicated in the accompanying illustrations.



Pavlovsky has emphasized the importance of a group of fibres from the inferior cervical ganglion which reach the thyroid along the inferior thyroid arteries. Although in a few instances there were filaments from the middle ganglion accompanying this vessel they were not so constant and definite a feature as that described above.

The practical deduction to be made from the anatomical findings is the importance of extirpation of the middle and inferior cervico-ganglionic section of the sympathetic on at least one side—namely, that on which the thyroid changes are most pronounced. If partial denervation of the gland results in considerable mitigation of the symptoms, then it seems logical to suppose that a similar and still more complete procedure would be correspondingly more effective.

Further, it might be tentatively pointed out that since all the sympathetic supply to the thyroid passes out of the spinal cord at the level of the first and second dorsal segments and traverses the inferior ganglia, it follows that removal of the latter should be equivalent to removal of the entire three ganglia, and would obviate a more extensive operation.

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DELAYED CORNEAL ULCERATION FROM MUSTARD GAS.

BY

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THE two following cases which have come under our notice seem sufficiently important to be placed on record, and this for two reasons: first, because of their intrinsic clinical interest, and secondly, because of their specific importance from the point of view of war pensions. One of us has seen both cases, and so is able to be sure of the essential similarity between them.

We wish to emphasize that these ulcers have features which are so characteristic as to render them almost pathognomonic, and there should be no fear, therefore, of false claims being made for pensions on account of ordinary corneal ulcers.

The history of the two cases is as follows.

CASE I.

A medical man was attacked by mustard gas in 1917, and is in receipt of a pension for defective sight of the left eye from corneal nebulae resulting from ulceration in 1922. The right cornea was unaffected until May 7th, 1928—that is, eleven years after the gassing. It then spontaneously became ulcerated at a point downwards and to the nasal side. The ulcer at first was small, but afterwards enlarged so as to involve more than one-third of the area of the cornea. From the first it was deep and crater-like at its centre, extending down to Descemet's membrane. For many weeks it seemed that it would perforate at this spot; but this did not happen, and it ultimately healed over. In the substance of the cornea were grey lines of infiltration radiating more or less from the borders of the ulcer; a small area only was stained by fluorescein.

On curetting, the surface epithelium of the cornea was found to be sodden and ill nourished for a considerable area around; it easily separated, leaving a large bare surface. The substantia propria was infiltrated in such a way as to produce a sort of cleft in its substance in a plane parallel with the surface. The ocular conjunctiva exhibited the appearance, to be referred to later, which is characteristic of these cases. (Fig. 1, C, Fig. 2, D.)

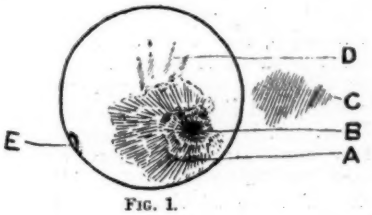

FIG. 1.

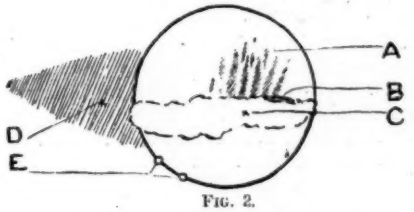

FIG. 2.

Some iritis developed, but it was very mild in degree, and caused no trouble; the left eye remained quiescent throughout. There was never any very acute reaction in the eye, and photophobia was less marked than would have occurred from an ordinary ulcer. The general appearance was that of a slowly spreading, very indolent ulcer, of which a small part only stained; corneal infiltration extended in advance of the ulceration, which gradually spread so as to invade the pupillary area, producing considerable defect of vision, which necessarily is permanent.

At the end of five months it seemed that the extension of the ulcer had stopped. The clear point where Descemet's membrane had been exposed was becoming healed and the excavation gradually filling in. This progress has continued up to date; repair, however, is even now, at the end of seven months, by no means complete.

CASE II.

A healthy man, aged 38, when first seen by one of us gave the following history. He had suffered badly from mustard gas burns in the usual parts of the body, including the eyes, in July, 1917;

he was invalided as a consequence, and written down as B 2. From that time to the present he has been bothered at intervals by bright lights, but otherwise has had no particular trouble until July, 1928, when both corneae developed small deep ulcers, which showed little staining with fluorescein. Since then his trouble has slowly progressed, until on November 22nd, 1928, the condition of the eyes was as follows.

Extending across the cornea of the right eye from side to side, and beyond it on each side, invading the sclera for a short distance, was a deep, gutter-like excavation of the corneal tissue (Fig. 2, C). The edges had a somewhat rolled appearance, and at the situation B, Fig. 2, were sodden-looking and stained on instilling fluorescein; the remaining area did not stain. Above the ulcer, in the situation A, Fig. 2, was a greyish, somewhat linear infiltration of the cornea, and at E were two small punched-out circular ulcers. The conjunctiva over the area D, Fig. 2, was opaque white, and marbled in appearance, as described later.

The condition of the left eye was in all essentials similar to the right, but ulceration was not so extensive. There was the same gutter-like excavation affecting the part of the cornea exposed in the palpebral fissure. It extended rather more than half-way across the cornea, and involved the adjoining corneo-scleral junction; a small spot only stained. The conjunctiva showed the same scarred appearance, and there was no intraocular involvement.

It may at once be stated that all the eyes had essentially similar features, though differing in detail, and were clearly similar to the case published by Mr. Humphrey Neame in the *Transactions* of the Royal Society of Medicine in November, 1928.

We may now examine the special features of these ulcers. First the intolerance of light is much less marked than might have been expected from the extent of the ulcer, and the circumcorneal injection of the eyes was less than would be present in other forms of corneal ulcer of similar dimensions in patients of this age. The ulcers themselves showed a marked tendency to involve the parts exposed in the palpebral aperture—that is, of course, the part originally exposed to the gas. They were deeply excavated, had a gouged-out appearance, and the tissue at the edge appeared sodden and ill nourished. They extended deeply into the substantia propria—so deeply, in fact, as to expose Descemet's membrane in Case i. They did not, however, perforate. In general appearance they reminded one a little of a Mooren's ulcer. The instillation of fluorescein did not produce extensive staining, but only showed up small spots or areas, chiefly at the edges.

From the shelving side of the ulcers infiltration could be seen extending into the adjoining cornea, and showed up as a grey area in it which had a linear arrangement (Fig. 1, D, Fig. 2, A). In one case iritis was present, but it was quite mild, and this in spite of the long persistence of the condition. In both of our cases, as well as in Neame's, one or two small localized, deep, nearly circular ulcers developed at the limbus (Figs. 1 and 2, E).

A marked feature of the ulcers was the long period, roughly ten years, between what clearly was their ultimate cause and their actual development; their extreme indolence; their situation in the palpebral aperture; their deep, gouged-out appearance; the comparatively mild symptoms; and their slow healing. The conjunctiva within the palpebral aperture has a very characteristic appearance, and even now is a good deal reminiscent of its appearance at the time of the gassing. It is somewhat swollen and in parts is almost of a homogeneous pearly white colour; in other parts, where it is less opaque, it has a marbled appearance, the "veining" effect being produced by the vessels, which in places show great irregularity in their calibre. It seems reasonable to suggest that it was the damage done to the vascular and nerve supply of the cornea by the gas, and the subsequent scarring, which has resulted in permanent impairment of the nutrition of the cornea and so to its ultimate ulceration.

With regard to treatment, we believe the most help is to be obtained from curetting any staining area, and cauterizing this small point very carefully with carbolic, or with the actual cautery. We have tried many other drugs without any clear advantage. We seriously contemplated sewing the lids together, and are inclined to believe, like Mr. Herbert Fisher, that this would prove valuable. We doubt whether any form of corneal section is advisable.

NINE CASES OF ERYTHEMA NODOSUM.

BY

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AND

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DURING the winter of 1926 and spring of 1927 nine cases of erythema nodosum came under our notice in a busy country general practice. A short account of these cases may not be uninteresting as throwing some light upon the etiology of the condition.

Case 1.—A single woman, aged 23, first came under our notice with complete blindness in the right eye. She was sent to hospital to see a consultant, who reported to us that she was suffering from a retrobulbar neuritis of rheumatic origin. She was given salicylates internally and made a complete recovery in two months. She resumed her duties, but eight months later complained of pains in her limbs. On examination it was found that she had developed well-marked erythema nodosum, but had no signs or symptoms of rheumatism. Under our usual treatment—namely, sodium salicylate internally and liniment of methyl salicylate locally—she made a complete recovery within a fortnight.

Case 2.—We were called in to see this patient, a youth, aged 17, after he had been in bed with pyrexia for two days. For a further four days he remained feverish, but there was no other sign or symptom and a diagnosis could not be reached. The pyrexia did not respond to quinine treatment. On the seventh day of the fever he was given the following mixture every four hours.

Sod. salicyl.	gr. vij
Liq. ammon. acetas	ʒi
Spirit. chlorof.	ɱvij
Aq. camph. ... ... ad	ʒss

Twenty-four hours later his temperature started falling, and coincidently with this erythema nodosum appeared on both legs, causing much local pain and tenderness. Local application of liniment of methyl salicylate relieved the pain and the patient made an uneventful recovery. Apart from some asthma and a nasal catarrhal condition this patient had always been well. His mother was also slightly asthmatic, but the rest of the family—father and two brothers—were very strong and healthy.

Case 3.—A farm labourer, aged 37, reported with typical erythema nodosum on both legs. He declared that he felt perfectly well, but the "lumps" on his legs were somewhat tender to pressure, and his legs generally ached. His temperature and pulse were normal. He was sent home to bed and given the usual antirheumatic treatment. The following day we were summoned urgently to see the patient, and found him with a temperature of 101°, a rapid pulse, and feeling very sorry for himself. He had been feverish all night. A thorough examination revealed nothing more than the nodules on the legs. Within a further twenty-four hours the temperature and pulse had returned to normal, the nodules became smaller, and the patient recovered. He has been perfectly well for the last two years. The patient had been a healthy man until this illness, but it is interesting that one sister has since come under our care for pulmonary tuberculosis and has recently been discharged from a sanatorium, and a brother was given three months' leave for a chronic cough and doubtful signs in the chest.

Case 4.—The patient was a schoolgirl, aged 15. We were called upon to visit her father, a farmer, aged 47, who had always been a particularly strong and healthy man, but for the previous week he had suffered from a short dry cough, marked shortness of breath, and some cyanosis. The diagnosis of rheumatic pleurisy with pericarditis was later verified by his response to treatment, and he made a complete recovery. Casually we were asked to look at the girl's legs because she had been complaining of pain in them since the previous day. She had well-marked nodules on both legs with some pyrexia and sweating. Under antirheumatic treatment she recovered rapidly.

Case 5.—This patient, a woman aged 42, consulted us for "painful lumps" in both legs, diagnosed as a typical erythema nodosum. The usual treatment was prescribed. Three days later we were summoned to see her as she was worse. To our surprise we found her legs were more tender and inflamed. On further inquiry it was discovered that the dispenser had given her a methyl soap liniment instead of liniment of methyl salicylate. She obtained immediate relief with the latter liniment, but it took three weeks before the nodules completely disappeared with the pain. It is interesting to note that about fifteen months previously we had attended her only son for acute rheumatic arthritis, and he had been under our treatment for three months.

Case 6.—A woman, aged 45, consulted us with erythema nodosum of both legs. She felt a little run down and out of sorts, and complained of tenderness of the legs, but her temperature was normal, and apart from well-defined nodules on her legs nothing abnormal was found on examination. She was placed on the ordinary treatment. She was seen twice again; on the first

occasion she reported herself as free from trouble with her legs, and asked for a tonic. The patient declared that she had derived much relief from the local application of methyl salicylate ointment.

Case 7.—A married woman, aged 55, consulted us for "tender lumps on her legs." She complained of not feeling well, but, apart from slight anaemia and the condition of her legs, she appeared to us to be quite well. Our usual treatment was prescribed, and when she reported again in a week's time she was much improved.

Case 8.—This patient, a married woman aged 65, was under our treatment for heart trouble—aortic and mitral regurgitation. On this occasion she suddenly fell ill, with a temperature of 102° and a rapid irregular pulse. After four days of irregular pyrexia she apparently improved, the temperature returning to normal, but her pulse remaining somewhat irregular. Two days later—on the seventh day of her illness—she developed erythema nodosum, first in the left leg and later in the right leg. She could not tolerate salicylates, and it was many weeks before the nodules disappeared from her legs. The patient recovered from this attack, but died about nine months later from heart failure.

Case 9.—An unmarried woman, aged 22, reported with erythema nodosum in one leg only, much debility and anaemia, but no fever. She found great relief in the local application of methyl salicylate ointment. Finally, she made a complete recovery, but the marked debility and anaemia persisted for several weeks. We attended this patient subsequently on two occasions for erythema pernio, which responded to treatment with calcium lactate.

The series obviously is too short to warrant any final conclusions, but we could not help being struck by the following facts:

1. In four cases only were we able to detect pyrexia (Cases 2, 3, 4, and 8). In two cases the nodules on the legs apparently were present before the pyrexia (Cases 3 and 4); in the other two cases (2 and 8) the fever had abated before the nodules appeared.

2. The close association in two cases (4 and 5) between a family history of acute rheumatism and erythema nodosum. In two of the cases (1 and 8) there had been a definite attack of acute rheumatism.

3. In every case marked relief to the tenderness in the legs was obtained by the local application of methyl salicylate, either as the liniment or as the ointment.

4. Internal administration of sodium salicylate definitely did appear to have a beneficial effect, and intolerance to the drug was accompanied by the prolonged course of the condition (Case 8).

5. The families of all these patients are well known to us, and in no instance, except Case 3, was there a past history of tuberculosis.

THE USE OF HEROIN AFTER ABDOMINAL OPERATIONS: A WARNING.

BY

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THE relief of pain after an abdominal operation is not infrequently one of the first cares of the surgeon, and for this purpose the injection of morphine or heroin is often necessary. For some years, in common, I believe, with many surgeons, I have favoured heroin rather than morphine. My reasons are shortly as follows: (1) heroin is more effective as an analgesic than morphine; (2) it has less after-effect as regards distension, constipation, and general malaise; (3) if a tube of morphine has been kept for some little time a change into apomorphine may occur, with resulting vomiting.

For a good many years, both in hospital and in private practice, when necessary 1/6 grain of heroin has been administered without the slightest ill effect. The following two cases are cited, however, as a warning.

CASE I.

A lady, 64 years of age, rather asthmatic, suffered from chronic cholecystitis. Owing to the asthma, in order to give as little anaesthetic as possible, 1/4 grain of morphine together with 1/100 grain of atropine was administered half an hour before operation, but it was done purposely for the reasons mentioned above.

The operation consisted of a cholecystectomy, and the anaesthetic was gas and oxygen and warmed ether. The operation was completed in forty-five minutes, and the patient was back in bed at about 10 a.m. At 1 p.m. I saw her, when she was well round, and complaining of a lot of pain. She was sufficiently conscious to be asking for her artificial teeth. As she seemed to be in great pain I ordered 1/6 grain of heroin, which was administered just after 1 o'clock. At 1.25 I received a telephone message to come round to the nursing home at once. The injection had relieved the pain within five or six minutes, and the matron had left the room, but thought that she would go in and see her again after about ten minutes. On going into the room the patient was talking, when suddenly she became quiet and the matron noticed a change in her breathing. She immediately realized that the patient was profoundly unconscious, administered strychnine, brandy, and ether hypodermically, and sent for me. When I arrived the patient was blue, the skin was mottled, and she was breathing about once in every two and a half minutes; but the pupils were not pin-point, and never were during the whole course of events. The pulse was good, about 80. I immediately thought of internal haemorrhage and of a possible embolism, but obviously neither of these catastrophes had occurred.

At the time I was in the dark as to the cause of the patient's condition, and although it occurred shortly after the administration of the heroin, I did not believe this to be the cause. The patient was literally *in extremis*. The tongue was pulled out, the mattress turned round, and artificial respiration commenced. Owing to the conformity of the chest the greatest difficulty was experienced in forcing inspiration, and all that seemed possible to do was to empty the chest of air. A voluntary breath was taken about once every two minutes. After a short time I sent for Dr. R. J. Clausen, who had administered the anaesthetic, with the intention of possibly inflating the lungs through a laryngeal tube. Pending his arrival, artificial respiration was maintained. Dr. Clausen considered that it would be inadvisable to pass a laryngeal tube, and tried to stimulate inspiration by the administration of carbon dioxide. This, however, did not meet with any success.

After about an hour the respirations seemed to be rather better. The patient was now breathing about once every minute, and it was then noticed that if artificial respiration was stopped the pulse began to flag. After about an hour and a half the respirations approximated two to the minute, and the first sign of hope appeared—namely, the coffee which had previously been administered per rectum was returned. Just about this time a few involuntary face movements were noticed, and artificial respiration could be left off for a short while. After about two hours I noticed that the inspiratory movement of artificial respiration stimulated a voluntary respiration, but that without artificial respiration only two to three respirations a minute were voluntarily performed. At the end of three hours there were definite signs of returning consciousness, and a conjunctival reflex was occasionally obtained when artificial respiration was continued. On ceasing the artificial respiration the reflex disappeared.

At this time I realized that the breathing was that of a profoundly drugged person, similar to what I had seen in morphine poisoning. It was necessary to continue intermittent artificial respiration for another hour, care being taken that the artificial inspiratory movement did not stifle a voluntary expiratory effort, and vice versa. At 6 p.m. respirations were about five to the minute, and the need for artificial respiration no longer existed. At 6.30 the patient recovered consciousness—that is, after five and a half hours.

The following morning respirations were ten to the minute. Convalescence after this was uneventful, except for considerable pain in the right arm, which had been dislocated during the movements of artificial respiration. This necessitated another anaesthetic for replacing the joint by Kocher's method.

The tube of heroin tablets (1/6 grain) was subsequently investigated. It was not a new tube, and tablets had already been administered to other patients without ill effect.

While the patient was convalescent I vaccinated the right arm with 1/6 grain of heroin dissolved in water, and vaccinated the left arm with a normal saline to act as a control, in order to see if a possible idiosyncrasy for heroin existed. No difference between the two sides could be detected. It is, of course, possible that a desensitizing effect may have been produced, though this is very unlikely.

CASE II.

The second case, for particulars of which I am indebted to Mr. W. E. Tanner, was that of a patient, aged 49, on whom cholecystectomy and appendicectomy had been performed. Before the operation 1/100 grain of atropine was given, and the anaesthetic was open ether. About an hour after the patient had been put back to bed 1/6 grain of heroin was given hypodermically. The patient became comatose, with pin-point pupils and no conjunctival reflex. The respirations fell to three a minute, the pulse to 60. She was given pituitary extract and strychnine, and artificial respiration was carried out.

Five hours after the injection of heroin the respirations were nine to the minute. The patient was drowsy, but could be roused. Fifteen hours later the patient was fully conscious; the respirations were eighteen to the minute, and she made an uninterrupted recovery.

CONCLUSIONS.

I have thought it well to put these two cases on record to serve as a warning. Respiratory stoppage must be very rare, but nevertheless when it does occur the very alarming situation can scarcely be imagined.

It is interesting that both these cases were cholecystectomies. In the one case morphine had been given prior to the operation, but not in the other. On the other hand,

the case which had had no morphine prior to the operation had had the heroin administered much sooner than in the first case. Since this episode, which nearly ended in a catastrophe, my practice has been (1) to be quite sure that the patient is fully round from the anaesthetic before any hypodermic injection is administered, and (2) to give only 1/12 grain of heroin, and to repeat it if necessary. My preference for heroin over morphine is still very strong; but the above two cases show that its effect on the respiratory centre may be exceedingly dangerous unless it is given in small doses. It is to draw attention to this fact that I have thought it advisable to publish these two cases.

THREE CASES OF VOLVULUS OF THE SIGMOID FLEXURE OF THE COLON.

BY

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IN the first half of 1928 three cases of intestinal obstruction due to volvulus of the sigmoid flexure of the colon came under my care and recovered after operation.

CASE I.

A woman, aged 45, was admitted to the Bedford County Hospital on January 6th, 1928, suffering from extreme abdominal distension, severe pain, and great difficulty of breathing. She gave a long-standing history of constipation, sometimes getting no action of the bowels for three weeks. For three years she had been liable to attacks of abdominal pain, but had never vomited. The history of the present attack was absolute constipation for five days, abdominal pain for two days, retching but no vomiting, and great difficulty in breathing.

On admission to hospital the abdomen was greatly distended, no movement was visible, and there was tenderness in the lower abdomen, especially on the left side.

Operation.—The abdomen was opened in the middle line, and a large quantity of stinking blood-stained fluid escaped. A large cyst-like swelling presented, filling the pelvis, extending well above the umbilicus, and measuring ten or twelve inches vertically. This swelling was black in colour, resonant, and evidently was gangrenous bowel. It was too large to extract through the incision, so was punctured with a large trocar, giving vent to horribly fetid gas. The gangrenous bowel was then delivered from the abdomen, and a piece about eighteen inches long was found to be twisted. This was resected, and the ends of healthy bowel were brought out of the wound and tubes tied in. The cut ends of healthy gut were fixed to one another and to the edges of the peritoneum. When the patient recovered from the anaesthetic her first remark was that she could breathe freely.

The colostomy acted three days later. On February 20th the spur between the divided ends of bowel was crushed by an enterotome, and came away on March 2nd.

She left the hospital on April 23rd with a small sinus. When last seen, on October 19th, there was a pinhole aperture from which a little gas escaped; her bowels were acting well, she had grown stout, and was in perfect health. After the operation *x*-ray examinations with a barium meal and enema showed that the part of bowel removed consisted of sigmoid flexure and pelvic colon.

CASE II.

A lady, aged 19, pupil at a physical training college, was taken ill at 4 a.m. on May 27th, 1928, with abdominal pain situated chiefly under the left costal margin and in the left loin. She did not vomit, and there was no rise of temperature. Enemata were given without result, and no flatus was passed. These symptoms continued until I saw her on May 28th, at 7 p.m. There was then slight distension of the abdomen, and the chief pain was in the left upper quadrant. There was considerable difficulty of breathing. Morphine and atropine were given, as it was thought the symptoms might be due to enterospasm.

On May 29th there was no improvement, and she was admitted to a nursing home for operation. A subumbilical median incision was made, and the sigmoid flexure of the colon was found to be enormously distended, twisted, and gangrenous. It measured about six inches in diameter, and pressed on the diaphragm. The gangrenous bowel was brought out of the abdomen and resected. Tubes were tied in the cut ends.

On June 2nd, as the abdomen remained distended and there was no discharge from the colostomy, a caecostomy was performed, and 25 c.cm. of *B. welchii* serum was given. Ten days later the caecostomy closed, and on July 1st the patient got up.

On July 11th an enterotome was inserted to crush the spur between the divided ends of the bowel. The bowels acted naturally on July 18th, and next day the clamp was removed. From this time the opening rapidly closed, the bowels acted daily, and on August 4th she left the nursing home with a minute fistulous opening. On October 30th this had completely closed; the bowels acted daily after a dose of petroleum.

Before the attack of volvulus the patient had been very healthy except that she suffered from constipation, for which she had taken large doses of various aperients.

CASE III.

A gentleman, aged 74, was admitted to a nursing home on June 10th, 1928, suffering from symptoms of intestinal obstruction of three or four days' duration.

Previous History.—In 1917 he suffered from constipation, with pain in the back and chest due to flatulence. In 1919 he had a similar attack. In 1926 he had a worse attack, and was in bed for a month.

On admission to the nursing home he had absolute constipation, and no flatus could be passed. Enemata had no effect. He had been vomiting for two days. The abdomen was very distended.

A subumbilical median incision was made and an enormous distension of the pelvic colon and sigmoid flexure was found, due to a twist. Owing to the age of the patient and to the bowel not being gangrenous resection was thought to be contra-indicated. After untwisting the bowel an opening was made near the lower end of the volvulus and a large tube inserted. This gave some relief, but the abdomen remained distended. At the operation 25 c.cm. of *B. welchii* serum was given.

On June 16th caecostomy was performed. This was followed by acute gastric dilatation, manifested by great swelling over the stomach and persistent vomiting. The viscus was washed out two or three times a day for three days, and saline enemata, pituitrin, and strychnine were administered.

He gradually improved, and the caecostomy and colostomy openings discharged freely. He gradually regained health and strength, and, except for the bowel acting through the colostomy, may be considered to have regained his normal health.

Remarks.

The interest of these cases lies in the fact that they all recovered, that they occurred within six months, and are the only cases of volvulus I have met with in a period of over thirty years' work as surgeon to a hospital.

THE SAFETY OF ETHYL CHLORIDE, AND THE POSITION OF THE PATIENT DURING GENERAL ANAESTHESIA.

BY

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AT a coroner's inquiry into a recent death under ethyl chloride in Melbourne the question was raised as to the safety of ethyl chloride as an anaesthetic. Like every other anaesthetic, there is a risk in its administration under certain conditions, especially by the closed method—that is, a method in which air is not admitted to the patient during induction—but given a free supply of air during induction and used in either the open or semi-open method, it is one of the safest of all anaesthetics, not even excepting nitrous oxide and oxygen. The above remarks do not mean that one can be free and easy with it; no anaesthetist at any time can ever be free and easy with any anaesthetic. By the semi-open method the air valve in the inhaler, which should have a diameter of not less than half an inch, is gradually closed over as induction proceeds, so that by the time induction is completed—which is, as a rule, in from one and a half to two and a half minutes—the air valve is fully closed. This will give from three to five minutes' full anaesthesia.

Ethyl chloride is not a drug that should be used for prolonged anaesthesia, nor is it intended that it should so be used, except under very exceptional circumstances, and in the hands of an expert. This is for two reasons: first, its great cost, and secondly, its wastefulness when used for any length of time by the open method. It is one of the very best of all the anaesthetics we have for short operations of from one to five minutes or for preliminary induction to ether. In using the words "ethyl chloride," I include also somnoform, which is 83 per cent. ethyl chloride, 16 per cent. ethyl bromide, and 1 per cent. methyl bromide. At the Melbourne Dental Hospital and the Melbourne Eye and Ear Hospital it has been used in considerably over 75,000 patients of all ages during the past twenty-three years, and there have been two deaths, one of which I think should not have happened. The collapse occurred during a second administration of ethyl chloride to an exceptionally delicate female patient who had recently had a very severe haemorrhage and was not, in my opinion, a fit subject for the second administration of an anaesthetic, either local or general.

This morning (December 6th), on reading the report of the inquest in the morning papers, I decided to test for myself the so-called dangerous effects of ethyl chloride under what would normally be considered disadvantageous circumstances. Feeling off colour with a threatening cold, I took 15 grains of antipyrine and 5 grains of caffeine citrate in half a glass of hot water, and followed this by a good breakfast. I then went down to the Melbourne Dental Hospital and, sitting upright in the dental chair, had the following administrations given to me by Dr. Aird.

First Administration.

Pulse before induction (good, regular) ...	100
Blood pressure before induction	158 mm.
Anaesthetic—Ethyl chloride by the semi-open method	8 c.cm.
Pulse 1 minute after induction began ...	104
Blood pressure 1 minute after commencing induction	170 mm.
Pulse 2 minutes after commencing induction	102
Blood pressure 2 minutes after commencing induction	162 mm.
Time of induction	2 min. 10 sec.
Duration of anaesthesia	5½ min.

There was then an interval of fifteen minutes before the second administration—this time semi-open somnoform.

Second Administration.

Pulse before commencing administration ...	80
Blood pressure before commencing administration	158 mm.
Amount of somnoform used	5 c.cm.
Pulse 1 minute after administration ...	104
Blood pressure 1 minute after administration	176 mm.
Pulse 2 minutes after administration ...	104
Blood pressure 2 minutes after administration	164 mm.
Time taken to induce full anaesthesia ...	2 min. 35 sec.
Duration of anaesthesia	4½ min.

Interval of fifteen minutes. This time the method used was open ethyl chloride.

Third Administration.

Pulse before commencing administration ...	84
Blood pressure before induction commenced	156 mm.
Amount of ethyl chloride used	13 c.cm.
Time taken in inducing full anaesthesia ...	2¼ min.
Pulse 1 minute after induction	102
Blood pressure 1 minute after induction ...	150 mm.
Pulse 2 minutes after induction	104
Blood pressure 2 minutes after induction ...	156 mm.
Duration of anaesthesia	5 min. 40 sec.

The first administration was commenced at 11.35 a.m., and the third at 12.20 p.m. Following upon the third administration I felt slightly sick, but with no real tendency to vomit. I left the hospital at 12.45 p.m., and after a pick-me-up enjoyed a hearty lunch at 1 p.m. It will be noticed that the blood pressure rose during induction in both the semi-open methods and remained about normal during the open method of induction. The pulse rate also rose during induction, and was always of good volume. On each occasion the anaesthetic was taken quietly, without any attempt to struggle, and in all three administrations the induction was of a quite pleasant nature. At no time was there the least feeling of want of air, fullness in the head, or pulsation of the heart, but just a very pleasant sensation of drifting off to sleep, with a creepy feeling gradually spreading from the feet upwards.

At the Melbourne Dental Hospital all general anaesthetics are given in the upright position at an angle of about 80 degrees. In my own work, for all classes of cases and patients of all ages, I always prefer the head and shoulders well raised and at an angle comfortable for the patient during induction. Whatever general anaesthetic is used comfort of the patient during induction is an essential. No patient can take an anaesthetic decently if he is in an uncomfortable position while going under. The same patient who will resist going under in a head low or prone position will take chloroform quite naturally and quietly if sitting comfortably in an armchair. He will have none of that feeling of fullness in the head or increased pumping action of the heart, so frequent and so very disturbing to a full-blooded patient when placed in the prone position. The comfort with which a patient will take a general anaesthetic in the upright position, as against the distress felt when in the prone position, was markedly illustrated in many cases in which I was able to give chloroform and ether to able-bodied men in the Royal Navy and Royal Australian Navy during the war. I was fortunate in having frequent opportunities of trying induction on one and the same patient in both the prone and the upright position, and the lurid remarks passed by these men against the prone position, as compared with the upright or semi-upright, were very instructive.

Persons undergoing general anaesthesia show during induction a marked tendency to cerebral congestion, which expresses itself as cerebral excitement and a tendency to struggle; this is especially the case if the patient is not comfortable. No anaesthetist should commence his work until he is assured of the comfort of his patient. With an upright patient not only is there less tendency to struggle, which means there is less strain thrown on the heart, but less anaesthetic is required for induction purposes. We are working with the advantage of a not overcongested brain. The anaesthetist can always lower the patient quietly to a more prone position for the comfort of the surgeon, after induction, should it be necessary to do so. Personally, I always prefer to retain, whenever possible and not inconvenient to the surgeon, a certain amount of head and shoulder elevation throughout the operation.

Conclusions.

Using these methods for over thirty years in patients of all classes and all ages, I have not had a single anaesthetic fatality. During induction we require a brain as anaemic as possible; we can get all the congestion required from the anaesthetic itself during induction. Induction of anaesthesia in a patient with a congested brain produces struggling, general discomfort, noises and a feeling of fullness in the head, and throws an extra strain on the heart. If that heart is abnormal or lacking in tone, then the extra strain may result in collapse and in a death, which might have been avoided.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

LEPROSY IN AN INFANT.

MANY cases of leprosy in infants have now been recorded, but in the present instance some unusual clinical details appear worthy of publication.

A female child was born in the leper home at Kangpokpi (Manipur State, Assam) on December 25th, 1924; both parents were Kabui Nagas undergoing treatment for leprosy. The mother was said to have had leprosy for twelve years, but the only signs of the disease were a few anaesthetic patches. The father had more extensive lesions and raised bacilli-bearing patches; after the birth of the child he developed a nodular eruption, thus proving that his disease was systemic and infectious.

The child at birth was noticed to have an ulcer on the plantar aspect of the right heel, about one-half by three-quarters of an inch; it did not readily heal on the application of zinc oxide ointment, and at the end of a week, since the child was born of leprous parents, it was thought wise to put her on local applications of hydnocarpus oil. Within two weeks the ulcer had healed completely, leaving a firm but slightly depressed scar, which has not broken down.

In May, 1925, the child and her parents were discharged as probably cured, but returned in seven months' time; before they left the colony no evidence of leprosy could be found in the child, but on its return a typically discoloured patch, measuring about 2½ by 3 in., on the left scapular region was noticed; this was treated by the usual method of subcutaneous injections of hydnocarpus oil and creosote (4 per cent.), and entirely cleared up in two months. There has been no recurrence since (June, 1928), and the area which was affected is normal both in colour and sensation.

Soon after the return to the asylum of the parents the mother of the child developed ascites, with a large liver and spleen; she went downhill rapidly and died greatly emaciated. No necropsy could be performed. The child is still living with the father.

The question at once arises whether this is an authentic case of pre-natal leprosy. If it is, then the theory that leprosy can be transmitted to the offspring of lepers before birth is strengthened. The initial ulcer, though suspicious, cannot be definitely proved to have been of leprous origin, and it is known that hydnocarpus oil will heal indolent ulcers when other remedies fail. *B. leprae* was not found in the ulcer, but this certainly does not exclude the diagnosis of leprosy, and anaesthesia in such a small child

was very hard to determine. The fact that signs of leprosy appeared in the child some months later strengthens the view that the initial lesion was of the same origin.

From whence did the child get the infection if it was pre-natal? The mother was not an infectious case, by the ordinary tests, and therefore it is questionable if she infected her child. Did the infection come through the father? Japanese workers have demonstrated that the testicle is one of the earliest infected organs, and Dr. Kobayashi uses the method of puncturing this organ as a means of diagnosis in doubtful cases which are sent to the Oshima Leper Home. Infection may therefore have been transmitted by the father, but it is strange that the heel should be affected first.

We consider that the case reported is unique, and that it is worth while recording it in the hope that others who have greater experience may be able to throw light on this question.

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ROBERT G. COCHRANE, M.D.,
M.R.C.P., D.T.M. and H.,
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A CASE OF BILATERAL SYNDACTYLISM.

THE following case may be of interest as a surgical curiosity.

The patient, a young man of eighteen, has the middle and ring fingers of each hand joined together throughout the whole length of their normally contiguous surfaces. Each finger otherwise appears as a separate entity.

On both sides (1) the skin on the palmar aspect of the two fingers forms one plain surface, (2) the groove on the dorsum runs between the whole length of the fingers, (3) each nail is separate, and (4) there is free movement in all joints except the distal, the two fingers working together.

In the right hand, the distal joints are fixed in the position of extension, and the middle finger is longer than the ring, as is usual. In the left hand the distal joint of the middle finger is markedly hyper-extended, while that of the ring finger is apparently so to a less degree. This makes the two fingers appear of equal length.

From the radiogram it will be observed that the bones of each finger are normal, with the exception of the terminal phalanges, which are fused. In the right hand an exostosis has grown laterally from the tip of the ring finger to unite with the shaft

of the middle, and there are arthritic changes in the joints of both fingers. In the left hand, the proximal and distal ends of the phalanges are joined together, but the shafts of the bones are separate. This is evidently the cause of the hyper-extension of the middle finger, the joint of which is dislocated. The apparent hyper-extension of the ring finger is shown as really being a bowing backward of the phalanx. Here again the joint has undergone arthritic changes.

As regards family history, it is interesting to note that an uncle on the father's side had the same condition.

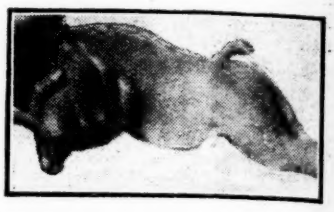
No treatment has been suggested, as there is very little disability, and any operative intervention would probably have no beneficial result. I understand that syndactylism of the fingers, particularly to the extent described, is not common, and have therefore ventured to record the case.

Kidderminster. C. PETVIN PORTER, M.B., Ch.B.

BABY BORN WITH A "TAIL."

THE following case seems to be of sufficient interest and rarity to report.

On November 23rd, 1928, a Chinese woman gave birth to a full-term baby girl with a "tail" $1\frac{3}{4}$ inches long. The baby weighed 6 lb. 9 oz., and appeared to be normal in all other respects. This was the third pregnancy, and there was no history of abnormalities in previous children.



On the fifth day the "tail" was removed by operation under local anaesthesia. It was not homologous with the tail of the lower animals, but was an outgrowth, consisting of skin and subcutaneous tissue only, from the region of the fourth sacral vertebra, the spinal column itself being complete. The baby left hospital on the sixteenth day in fairly good condition, though not yet having regained its birth weight.

I am indebted to Dr. F. R. Ashton for permission to publish this case.

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Reports of Societies.

CHRONIC DYSPEPSIAS IN CHILDHOOD.

AT a meeting of the Medical Society of London, held on March 11th, with the president, Dr. J. W. CARR, in the chair, a discussion took place on the chronic dyspepsias of children over the age of infancy.

Dr. REGINALD MILLER said he proposed to deal with the subject partly by comparing chronic indigestion in children with that in adults and partly by considering certain points of more than ordinary difficulty. In regard to the former he thought that the chief difference in the child lay in the diminished importance, both in frequency and severity, of gastric as opposed to intestinal dyspepsia. From this it followed that local abdominal symptoms were far less marked in children than in adults, being often overshadowed by the general constitutional symptoms. Dr. Miller divided the dyspepsias of childhood into three etiological groups: gastric, hepatic, and intestinal. Dealing with gastric cases under the usual subdivisions of organic, reflex, and functional disorders, he pointed out the rarity of the organic group and the infrequency of the reflex group, with the exception of those cases where chronic appendicitis caused gastric symptoms. The subject was controversial, but he thought it fair to say that in the child pain in the right iliac fossa connoted disease of the appendix or neighbouring organs far more constantly than in the adult. Of the functional gastric dyspepsias less work had been done in investigating those of children than of adults, though one recent paper had suggested that hyperchlorhydria was a common cause of dyspepsia in children. In cases where a sharp pain was felt directly after food Dr. Miller believed that it was produced in the intestine rather than in the stomach, and was the result of stimulation of peristalsis. Weakly older children might have atonic dropped stomachs, and there was a rare group of cases of gastromegaly, the causation of which was not understood. Dealing next with the so-called hepatic cases, Dr. Miller stated that he thought many of the symptoms could really be traced to intestinal toxaemia with secondary disturbance of the liver. He said that, with regard to cyclical vomiting, there had been a tendency of late years to claim that a very large group of cases with chronic symptoms, mostly nervous, but also abdominal, were due to a sort of latent acidosis with lowered alkalinity of the blood. It had been stated by Dr. Cameron[1] and Dr. Osman[2] that 30 per cent. of hospital children suffered from cyclical vomiting, but in view of the high bread and low fat diet of the hospital child Dr. Miller wondered whether the terms acidosis and cyclical vomiting were being used in their accepted sense.

[1] *British Medical Journal*, February 2nd, 1929, p. 185.
[2] Ibid., January 26th, 1929, p. 150.

He thought that such latent acidosis would be relieved by comparatively small doses of alkali, and maintained that the correct sequence of events was, first, intestinal indigestion, then toxaemia arising from this, and, finally, as a result of the toxaemia, constitutional symptoms, including those of the nervous system. In diagnosing intestinal indigestion, the general symptoms of which were not always immediately suggestive of disorder of digestion, and might be attributed to psychological causes, he relied upon four signs. These were: enlargement of the abdomen, the occasional or persistent occurrence of obviously abnormal stools, the presence of gross indigestion as shown by microscopical and chemical examination of the faeces, and the presence of much indican in the urine. Certain types of intestinal indigestion could be recognized by careful examination of the faeces. These types included coeliac disease, shown by malabsorption of fat, starch indigestion, an uncommon form due to gross overfeeding with starch, paraffin indigestion, caused by overdosage with liquid paraffin, nut indigestion, possibly resulting from the use of the various preparations of bran and husks now on the market, cases associated with the presence of Lamblia, and cases of constipation with toxaemia. Why was one constipated child in perfect constitutional health and another obviously ill from toxaemia? The cause of the toxaemia was thought by some to be purely mechanical, while others invoked the presence of some abnormal bacterial infection. Dr. Miller said he had been unable to correlate toxaemia with any changes in the intestinal flora. Lastly, he referred to the frequency with which mucus was found in the stools of many patients with intestinal indigestion, a fact suggesting that the cause of toxaemia lay in a colitis which increased the permeability of the colonic wall.

Dr. W. G. WYLLIE stressed the close interplay in young children between the gastro-intestinal and the nervous systems. In many intestinal disorders nervous symptoms occurred which were no doubt secondary, although they often predominantly coloured the mother's picture of the child's ailment. In certain gastric disorders it was not so clear that the nervous symptoms were necessarily secondary, and, indeed, it often appeared that the reverse was the case. The liver undoubtedly played an important part in all the dyspepsias, but liver function tests had so far failed to indicate in what manner the liver was inadequate except in cyclical vomiting, where it was known that a glycogen depletion occurred. Another important feature of the dyspepsias in childhood was the abundant manufacture of mucus in the gastro-intestinal tract. Dr. Wyllie classified the chronic dyspepsias of childhood in two groups, roughly intestinal and gastric, but he emphasized that many of the terms used merely denoted clinical features and were lacking in scientific precision. Chronic intestinal dyspepsia he described as essentially a disease of the urban child of the hospital class. The symptom-complex included various "nervous" manifestations, such as restless nights, while fainting attacks and signs of vasomotor disturbance were also present. Sometimes wasting, loss of appetite, and a cough led to the suspicion of tuberculosis, and in some cases a troublesome papular rash was a marked feature. All these symptoms diverted attention from the bowel, but undigested food and excess of mucus in the stools were invariably present. A tendency to diarrhoea and great excess of mucus brought some of the cases into the category of "mucous disease." About the causation of coeliac disease, continued Dr. Wyllie, the two prevalent views were that it was due to a bacterial infection, possibly by organisms of the dysentery group, or, alternatively, to a primary disorder of fat metabolism. He mentioned recent work which showed that in cases of coeliac disease the blood fat was above normal. In chronic colitis it was very important to have the stools examined bacteriologically; in four recent cases Dr. Wyllie had found the Sonne type of dysentery bacillus. In cases of the gastric type vomiting was the prominent symptom. The speaker described first bilious attacks which occurred especially in children of a pronouncedly nervous disposition, and secondly, cyclical or recurrent vomiting. With regard to this latter disorder he thought further scientific proof was required to settle what were the exact disturbances of fat and carbohydrate metabolism present. These attacks of cyclical vomiting occurred in children of a peculiarly nervous temperament, often with a neurotic strain in their forebears, and it seemed to Dr. Wyllie that it was more reasonable to hold that cyclical vomiting was of directly cerebral origin than that it was dependent upon an intestinal disorder. In conclusion, he mentioned the relationship between dietetic deficiencies, including deficiencies of vitamins, and gastro-intestinal disorders.

Dr. B. E. SCHLESINGER said that while much clinical knowledge of the dyspepsias of childhood was available very little was known of their etiology. With regard to cyclical vomiting he inclined to the view that the cause was primarily nervous, and cited the case of a child with migraine, cyclical vomiting, and vasovagal attacks not unlike epilepsy, in which the fits were entirely brought to an end by a judicious diet containing increased carbohydrates and decreased fats. He knew a family in which one child had migraine and another cyclical vomiting, and suggested that both conditions might be related to some disturbance in the circulation of the brain. In this connexion it was of interest to note a case of migraine in a child who had also shown a persistent rise in blood pressure, quite uninfluenced by drugs, and another case in which vertigo and cyclical vomiting were associated; reduction of the blood pressure by means of liquor trinitrini had led to cessation of symptoms. He was interested in the class of "nut indigestion" mentioned by Dr. Miller, and he wondered if wholemeal bread might cause a similar disturbance. Dr. Schlesinger said that neither in the colitis of children nor of adults had he found alteration in the bacterial flora, and he suggested that the production of mucus in such cases, which was so little understood, might be a defensive mechanism on the part of the body.

Dr. F. G. CHANDLER inquired as to the origin of foul breath in dyspeptic cases. He also asked for help in the diagnosis of a patient, a sturdy boy of 6, who had frequent attacks of pallor with distension of the abdomen and urgent desire to defaecate after food. He also inquired as to the importance of air swallowing in the child, and whether food idiosyncrasies played any part in the dyspepsias of childhood.

Dr. W. S. C. COPEMAN, dealing with the problems of etiology, suggested that the trouble might begin in the infant, and that dyspepsia in later life might be due to dietetic and therapeutic errors in the infant. A study of infant feeding in France and Germany indicated that a much higher carbohydrate diet was favoured than in this country, and in the adult state the Frenchman was reported to be less liable to hyperchlorhydric dyspepsia than the natives of those countries where higher protein diets in infancy and childhood were employed. In certain cases of whooping-cough treatment with large doses of alkalis had led to a prolonged and persistent alteration in the hydrochloric acid content of the gastric juice.

The PRESIDENT said he had been struck by the references to the catarrhal condition of many children attending out-patient departments, and he had many years ago referred to the condition as a "muco-membranous catarrh" which affected both the respiratory and the gastro-intestinal tracts. He was of the opinion that measles played an important part in the production of the dyspepsias of childhood, and while the respiratory complications of measles were more widely recognized and were more serious in their results, the dyspepsias which arose after measles were numerically very noticeable. Children thus affected suffered for weeks and even for months from a dyspepsia in which loss of weight, loss of appetite, flatulence, and usually diarrhoea were prominent symptoms. He thought the prevalence of such cases after measles favoured the theory of a bacterial origin for many of the dyspepsias of childhood.

Mr. ZACHARY COPE said that he thought several surgical conditions which gave rise to dyspeptic symptoms should be mentioned. He instanced chronic tuberculous glands in the abdomen, whether calcified or not, which often gave rise to colicky pains which might be very vague and puzzling in their nature. Unless the condition was diagnosed early an acute intestinal obstruction might arise demanding a dangerous operation. Chronic intussusception might also give rise to a dyspepsia lasting for weeks, and

the tumour was not always felt in such cases. Finally, tuberculous peritonitis might cause dyspeptic symptoms associated with some distension of the abdomen.

Dr. MILLER said, in reply, that measles was so commonly the first and most debilitating infectious fever from which children suffered that it was bound to precede many cases of dyspepsia without having a causal connexion. He thought it dangerous to speak of the surgical conditions enumerated as dyspepsias. In reply to several questions he said that air swallowing was very common in children, and that while the cause of foul breath was often unknown, he had seen cases in which not only the breath but the whole patient had a disagreeable odour. He agreed with Dr. Wyllie as to the primary cerebral origin of what was generally accepted as true cyclical vomiting. With regard to coeliac disease, he thought it was also a question of careful definition, and he set out his reasons for being unable to accept the theory that this condition had a bacterial origin.

Dr. WYLLIE, replying briefly, stressed the importance of increased knowledge of the chemistry of the intestinal canal in cases of dyspepsia in childhood. He thought a low-grade infection might alter the chemistry of the cells of the intestine without actually producing obvious lesions.

DIAGNOSIS AND TREATMENT OF LOW BACK PAIN.

AT a meeting of the Orthopaedic Section of the Royal Society of Medicine, on March 5th, Dr. M. D. SMITH-PETERSEN (Boston, U.S.A.) opened a discussion on low back pain by considering the differential diagnosis between lumbo-sacral and sacro-iliac conditions, and reviewing the operation of sacro-iliac arthrodesis and its end-results. The president, Mr. NAUGHTON DUNN, was in the chair.

Dr. Smith-Petersen said that the differential diagnosis between lumbo-sacral and sacro-iliac conditions was not dependent upon any one pathognomonic sign; it could only be made on the basis of a careful history, covering an analysis of injury and its resultant pain distribution. By such a carefully taken history ideas were formed in regard to the diagnosis, so that the examination itself became more productive of evidence differentiating the two regions. In a general way it might be said in relation to injuries that leverage applied from above and producing hyperflexion of the spine resulted in muscle or ligamentous sprain, or, if very severe, compression fractures. Lifting injuries, on the other hand, might cause muscle sprain of the erector spinae, or ligamentous sprain of the sacro-iliac joints. The pain resulting from such an injury was necessarily dependent on the innervation of the structures involved. Injury of the supporting ligaments of the spine brought about local pain at the site of the injury, sometimes accompanied by referred pain along the peripheral distribution or the particular spine nerve supplying the innervation. Sacro-iliac sprain was accompanied by local pain over the sprained ligaments, with referred pain over the peripheral distribution of the first and second sacral nerves, these nerves supplying the innervation to the sacro-iliac regions. This distribution of pain was commonly referred to as "sciatica," the area involved being the gluteal region, the posterior and postero-lateral regions of the thigh, the knee, calf, and outer aspect of the ankle. This term, "sciatica," was misleading, since it implied involvement of the entire sciatic nerve, whereas actually there was involvement only of the first and second sacral nerves.

Physical Examination.

In the examination the attempt must be made to be as systematic as possible; the examination should include inspection, palpation, and motions. Inspection did not yield any particular information which assisted in differential diagnosis; it was helpful only in determining the acuteness of the symptoms by observing the presence or absence of muscle spasm. Palpation was of great importance, and should be performed in such a way that the examiner at all times knew which anatomical structure he was palpating. It was decidedly useful in differentiating a lumbar from a sacro-iliac lesion, since lesions of these regions gave rise to a very definite localized tenderness over the particular structures involved, and these areas of tenderness did not in any way overlap. In examining the mobility of the spine this part of the examination should be carried out in standing, sitting, and lying positions, with particular reference to mechanical leverage of muscles in these positions. For example, forward bending was limited in the standing and sitting positions in lumbar lesions, whereas the same motion was limited in sacro-iliac lesions with the patient standing, but free with the patient sitting. In the lying position the same motions were induced but in a passive manner, and if gently performed would yield valuable information.

After such a careful history and examination, the next step, necessarily, was to submit the patient to *x*-ray investigation. It was not possible to make a diagnosis of sacro-iliac relaxation or sprain by an *x*-ray examination, since though the appearances might be confirmatory they were not diagnostic. The diagnosis must be based on clinical findings, and the *x*-ray examination should be resorted to purely for confirmation; in sacro-iliac relaxation it was frequently negative. If there was a long history extending over a period of years the changes that might be found were narrowing of the joint line, increased density along the joint, and hypertrophic changes along the inferior margin of the joint. Disalignment of the pubis as seen in stereoscopic *x*-ray examination was sometimes considered evidence in favour of a slight sacro-iliac disalignment, but it was not proof of such a condition.

Dr. Smith-Petersen said that it had been his experience that cartilage removed from the sacro-iliac joint in cases of recurring sprain or relaxation showed perfectly definite histological changes; it was only natural that these changes should be present. In sacro-iliac disalignment or sprain the congruous surfaces of the sacrum and ilium no longer fitted. Prominence came into apposition to prominence, and consequently the covering cartilage was exposed to abnormal pressure. Cartilage exposed to abnormal pressure underwent degenerative changes as follows. (1) Myxomatous degeneration of the matrix; this was shown by deeper staining reaction and by nesting of the cartilage cells. (2) Surface fibrosis; instead of the hyaline cartilage extending to the joint surface the surface of the cartilage was covered by a layer of fibrous tissue—evidence that nature was trying to repair the damage brought about by the abnormal pressure to which the cartilage had been exposed. (3) Degeneration of the matrix was followed by a replacement fibrosis, so that instead of there being a clear staining matrix there were connective tissue fibres winding in and out among the cells. Such replacement fibrosis was normally seen in older people between the ages, perhaps, of 60 and 70, but when it was found in persons aged 20 to 30 it was distinctly abnormal. (4) Calcification of the cartilage cells was one of the late changes; it was seen chiefly in the basilar region of the cartilage next to the osteo-chondral junction. The changes just described were, in the speaker's opinion, characteristic of a traumatic arthritis as it affected hyaline cartilage.

The Operative Treatment.

Dr. Smith-Petersen said that he had described the operative fusion of the sacro-iliac joint in detail in previous publications; an important change had been made since the last of these, and consisted in a resection of the posterior iliac crest, allowing better approximation of the periosteum and gluteal fascia to the lumbar fascia. This was important, since the region of operation was one exposed to constant strain. Great care must be taken to avoid stretching of the scar of the incision.

Post-operative treatment involved four weeks in bed. No plaster cast was applied, but only a surgical dressing held in place by means of a binder. The amount of pain during the first few days after the operation varied in different individuals. Some patients insisted that they had no pain as compared with the pre-operative condition, their relief being almost instantaneous. Other patients had relatively severe pain, an aggravation of the pre-operative pain; this might last for two, three, or four days. At the end of this period most patients were absolutely comfortable, able to move in bed, and even to rest on the side of the operation. They were allowed to lie in any

position in which they were comfortable. At the end of the third week the patient was gradually allowed to sit up in bed. At first the headpiece of the bed was raised to an angle of 30 degrees, and as the days went by this angle was increased. The patient was never allowed to sit up in bed without first having the footpiece of the bed raised so as to keep his knees and hips flexed. If a hospital bed was not available a large pillow was used for this purpose. At the end of the fourth week the patient got out of bed and began to stand up and walk. It almost invariably required another week before the patient was able to do a great deal of walking. At the end of the fifth week the patient left the hospital. Activities were gradually increased, but no exercises were prescribed until the end of the eighth week. At that time mild postural exercises were started, these being of such a character as not to put any strain on the incision or joint. Some patients had returned to relatively hard work at the end of two to three months; this had always been against advice. As a rule the speaker did not like patients to return to heavy lifting and labour until the end of the third to fourth month. At the end of six months the patient should be able to lead a normal life without restrictions.

End-Results.

Altogether 160 to 170 cases had been dealt with; of these they had recorded end-results in 100. No cases were reported which had been operated upon less than a year ago; this eliminated a certain number. In the remaining cases they had been unable to get into touch with the patients, either by mail or by actual examination, so that a true end-result could not be given. Of the 100 cases, 88 were absolutely successful, 8 partially successful, and 4 cases were considered to be failures. In the 8 partially successful cases the patients had returned to their former activities, but had occasional discomfort either in relation to their scar or discomfort in the region of the peripheral distribution of the first and second sacral nerves. They had been definitely improved by the operation, and were glad they had had it, but they were not complete cures. Of the 4 failures, 2 turned out to be cases of arthritis. The speaker believed that in arthritis the response to the operation was poor, and relief from pain was very slow in coming about; he therefore advised against an operation until every step had been taken to rule out a possible arthritic condition. Of the other 2 failures one patient went to another clinic for relief of low backache; a very radical bone graft operation was performed which resulted in persistent pain. In the other case also there was persisting lumbo-sacral backache; first and second sacral nerve pain had been relieved in all four cases, but the patients had been unable to return to their former occupation, and consequently should be classified as failures.

Successful cases constituted a group in which entire relief from pain had been secured. The patients had returned to their pre-injury activities, whether the patient was a society woman or a labourer. They were in no way limited, and this point the speaker emphasized: there was permanent relief from pain, resulting in unlimited activity. Anybody could treat these cases by recumbency, rest, support, manipulation, and even plaster casts, and temporarily achieve relief, but in the cases operated upon permanent relief had been achieved without limitations in activities. No case had been operated upon without first having been given a chance of relief by conservative measures such as those mentioned. The series of operative cases constituted, then, a small proportion of cases actually seen, the remainder being relieved by conservative measures. In a series of 400 industrial accident cases the diagnosis of sacro-iliac relaxation or sprain was made in 20 per cent.; the diagnosis was discussed in full and written down in the report. Of this 20 per cent. a small portion—less than 5 per cent.—had been operated upon. It was true, then, that the operation had never been employed without first thoroughly studying each case, and trying every normal method of conservative treatment.

Sir ROBERT JONES spoke of the treatment of such cases in his own early days in practice, forty-five years ago. His uncle had a very large industrial practice, and injury to the back, due to lifting weights or to falls, was very frequent among the cases he was called upon to treat. On examination a good many of the cases were found to be accompanied by sciatica and by pains, particularly around the glutei. The simple treatment consisted first of all of applying a little counter-irritant for the lower part of the back, and then the use of a paper-plaster, consisting of pitch put on thick plaster, six or eight layers of which made a very firm cardboard indeed. As a rule, after from three to six weeks, the patients got quite well, but a certain number did not, and in those days these were almost taken for granted to be neurotics, or perhaps malingerers. His own attention was drawn to the value of manipulation through his observation of a patient who, as the result of a fall, quickly recovered from an obstinate condition for which he had been under treatment more or less for two years. Thereafter the speaker manipulated the spine in these cases, often with astonishingly effective results. He learned a good deal as to the probable cause of the pain from Goldthwaite, the American orthopaedist, but he feared that frequent successes in the manipulative treatment of these back cases had induced a complacency which should never exist in surgery, and now Dr. Smith-Petersen had come along and proved conclusively that there was a type of case where it was not enough simply to say that there were adhesions which wanted breaking down, but that there was a distinct pathological lesion. He still thought, however, that in a great many cases recovery was obtained by the breaking down of adhesions; this was difficult to prove, but he felt that the same thing happened at the lumbar-sacral angle as happened undoubtedly higher up in the spine. It had never seemed to him that any pain had quite the same intensity as the pain of adhesions. In many cases in which the sacro-iliac joint and the lumbar spine were involved there was distinct inflammation and movement of structures with very little pain indeed. In early cases of tuberculosis, for example, there was not very much pain, and even in advanced tuberculosis, with a very mobile joint, the pain was often the least prominent of the symptoms. An American orthopaedic surgeon sought his advice in a case of sacro-iliac trouble which had lasted for a long time and resisted all forms of treatment. The speaker urged that an attempt be made to break down any adhesions, and somewhat sceptically the attempt was made, with the result that the case yielded readily to manipulation. While he agreed with everything that Dr. Smith-Petersen had said, he would still, in a typical case, before venturing to operate, try to break down adhesions, a course of action which often produced quite dramatic effects.

Dr. STACEY WILSON (Birmingham) emphasized that any injury of the spine was certain to be followed by a muscular contraction to protect the injured part, and that after recovery from the injury the habit of contraction would remain. This spasmodic contraction, which was the cause of the continuance of the trouble, could be overcome by rhythmical exercises, of which the speaker gave a demonstration.

Mr. A. S. B. BANKART thought there was no doubt as to the existence of adhesions which needed to be broken down. He noted the omission from Dr. Smith-Petersen's lecture of any mention of the commonest cause of backache—namely, the neurotic spine; not the "hysterical spine" of young girls, but a definite neurosis superimposed upon a lesion. This coloured the whole symptomatology of these simple conditions. It accounted for the diversity of symptoms which had been described, and opened a wide and profitable field for every conceivable kind of therapeutics.

The PRESIDENT said that his experience was that most of the cases got better by conservative treatment, but the results from operation which Dr. Smith-Petersen had shown were certainly astounding.

Dr. SMITH-PETERSEN said that he was accustomed to use manipulations, which he had included under the term "conservative methods." His conservative treatment consisted of supports, but if there was any evidence of disalignment he used manipulations. At the same time, American orthopaedic surgeons did not appear to have been so successful in regard to manipulations as their British colleagues.

DOSAGE IN RADIUM THERAPY.

A MEETING of the Section of Surgery of the Royal Society of Medicine was held, under the presidency of Sir HOLBURT WARING, on March 6th, at the Middlesex Hospital, when Professor SIDNEY RUSS gave an address on some principles of dosage in radium therapy. A demonstration of cases treated with radium by the surgeons of the Middlesex Hospital took place at the end of the meeting.

Professor Russ advanced some considerations on the amount of screening desirable in the application of radium. If it was desired to carry out pure gamma-ray therapy a screen was required which would cut out all the alpha and beta radiation. To cut out the alpha radiation was easy, but it was difficult to say what thickness of screen sufficed for the beta. Physicists appeared to be agreed, however, that 1 mm. of platinum or 2 mm. of lead and silver would give over 99 per cent. of what they called easily absorbed radiation. There had been some controversy as to whether better results were obtained with 1 mm. of platinum or with 1.5 mm., but so far as his own investigations had gone he had not been able to discover that the additional screening furnished essentially different results. From a survey of physical considerations he thought it could be said that a pure gamma radiation was being dealt with when a screen of 1 mm. of platinum was employed. The main principles of dosage were: (1) to produce a lethal action on malignant cells; (2) to do as little damage as possible to normal tissues; (3) to encourage local reactions in normal tissues which would assist the disappearance of the tumour; and (4) to secure as uniform a radiation of the malignant mass as possible. Animal experiments had shown the lethal action from a radium tube to be rather surprisingly limited to a zone around the tumour. Generally speaking, it would be correct to say that radium must be looked upon as supplying a localized form of treatment. A very important matter in radium dosage was to avoid damage to the normal tissues. This had been for years recognized by the French school, who gave the name of "radio-necrosis" to the actual destruction of normal tissues which might accompany the irradiation of a tumour. Dominici and others had laid great stress on the ill effects of giving an overdose to the normal tissues. Not only did this hinder the gradual transformation of the malignant cells, but it interfered with any processes which the body—the host—might put forward in the endeavour to complete what radiation had begun. An essential point was to encourage any local reaction of which the body was capable. It was also very desirable so to arrange the radiation that the malignant mass was as uniformly irradiated as possible, save perhaps for additional irradiation at the growing edge, where the normal tissues of the host were being invaded. Professor Russ showed photographs of radium tubes variously disposed, with a view to pointing out that, if some regions received an adequate irradiation, other regions must receive an irradiation which was less than adequate. The time-intensity element raised one of the most important considerations in radium dosage. Here the biological reaction differed from and was less predictable than the physical. If it was a question of ionizing the air or affecting the photographic plate, then big intensity for a short time and small intensity for a long time were equivalent over a wide range. In the case of the biological reaction other factors appeared to intervene. Some remarkable results had been obtained in radium therapy by using the radium for longer intervals and cutting down the intensity of the radiation. One reason put forward to explain the increased effect was that the cells in a growing mass of tissue, being in a state of division, would be more vulnerable to the long-continued application. Professor Russ, however, was doubtful on physical grounds whether this reason was correct, and he said also that it was not agreed among clinicians that all growths were better treated with small doses for longer time. In the Stockholm technique for the treatment of cancer of the cervix uteri a strong dose for a short time was employed. In conclusion, he suggested that it might be worth while to consider whether the normal tissues generally, while able to cope perfectly well with a certain intensity of radiation, might not be overwhelmed when that intensity was exceeded. One could apply a source of radium to a subcutaneous nodule in such a way that a slight damage to the skin was caused, but with a more limited intensity, while the nodule equally disappeared, there was no skin damage. The action so far as the nodule was concerned was apparently the same, but in respect to the skin it was different. Was it that, when a certain intensity was exceeded, the processes in the normal tissues which would repeatedly restore equilibrium were no longer able to function?

Dr. EDGAR HAYDON (Newton Abbot) related some experiences of radium treatment in a small hospital in South Devon. Large doses of radium in uterine cases had proved most successful. In cases of antrum trouble he had also seen better results from fairly large doses of from 50 to 100 mg. A small incision was made in the cheek, piercing the wall of the antrum, and 100 mg. was left in for about eighteen hours or 50 mg. for thirty hours. He described also how the tongue and tonsils had been treated by the implantation of radium tubes. For surface radiation the method had been followed of encircling the growth, keeping the tubes a distance of 1.5 cm. apart, and pointing them to the centre of the growth.

Dr. MALCOLM DONALDSON said that clinically this question of dosage continued for a long time was very important. He was not altogether convinced that even in such cases as carcinoma of the cervix the heavy intensity for the short time was the better course. He would put it rather in this way, that in certain growths it was not so essential to have length of time. Professor Heyman of Stockholm had declared recently that 50 per cent. of his recurrences occurred *in situ*. This never happened when doses were applied of small intensity for a long time. The actual condition *in situ* was better in the case of growths treated by a small dose for a long time.

Sir HOLBURT WARING described a case in a girl, aged 14, who had been treated by radium two years previously for what was supposed to be sarcoma of the maxilla. She responded to treatment in that there was no evidence of local recurrence; but she had recently again come under observation on account of acute intestinal obstruction with general peritonitis. She was operated upon, and in a segment of the small intestine was found what was apparently a tumour mass. On excision and microscopical examination it was pronounced by the pathologist to be a sarcoma of the intestine, in his opinion secondary to the growth which had been cured in the jaw. He would have liked to hear opinions with regard to local and secondary recurrences in connexion with the problem of dosage. It seemed a matter in which a good deal of co-operation was called for between surgeon, radiologist, biochemist, and biophysicist.

HYSTEROTOMY AND TRACHELOTOMY.

AT a meeting of the North of England Obstetrical and Gynaecological Society on February 22nd, with the president, Dr. G. W. FITZGERALD (Manchester), in the chair, Dr. J. W. A. HUNTER (Manchester) read a note on hysterotomy.

Dr. Hunter pointed out that the word "hysterotomy" was used both for an incision into the uterine body through an abdominal incision and for an incision of the cervix per vaginam. He suggested that the word "trachelotomy" was more suitable for the latter operation, and he used it throughout in his note. Trachelotomy could be employed to facilitate the emptying of the gravid uterus either during pregnancy or at full term, when it was usually performed during labour. The note dealt with the use of the operation in labour; the cases of failure of the cervix to dilate were divided into two classes: (1) those in which the cervix was normal, and (2) those in which the cervix was abnormal either in size or consistency. The mechanism of normal cervical dilatation was described, and failure of this was noted as frequently due to premature rupture of the membranes, associated with slight disproportion between the foetal head and the maternal pelvis. The lecturer cited cases where the cervix was abnormal in length or structure; these were the cases where the cervix was congenitally long or elongated as a part of prolapse,

and those in which it was hard, thick, and fibrous, but not appreciably elongated. The last type was seen in elderly primigravidae, or in multigravidae as the result of scar tissue formation. The cases might be complicated by premature rupture of the membranes, slight extension of the head, or occipito-posterior positions. The patients were usually left for a considerable time, to give the cervix a chance of dilating, but eventually their pulse and temperature began to rise. There was often a history of considerable intervention, and the child might be dead. Recognized methods of delivery had difficulties and disadvantages. Trachelotomy allowed clean incisions into the cervix, which could be stitched up carefully immediately afterwards; it permitted delivery by forceps or craniotomy. The methods described involved one or two postero-lateral incisions from the external to the internal os, behind the middle line to avoid the cervical branches of the uterine artery. This length of incision prevented it extending further during delivery. If two incisions were decided upon it was important to mark the site of the second before making the first, since, after the first, much retraction occurred and orientation was difficult. The importance of accuracy of apposition in suture of the incisions was emphasized.

Clinical Demonstrations.

Professor CARLTON OLDFIELD (Leeds) showed a specimen of some foetal bones and a uterus removed after death. The foetal bones had caused intestinal obstruction.

The patient had had a Caesarean section performed in March, 1926. In July, 1927, she was admitted to hospital with abdominal pain; she was found to be six months pregnant, and had been taking "salts" to produce abortion. She had similar symptoms in December, 1927, with a little vaginal discharge, but left hospital well early in January, 1928, and was told to report just before full term. She was readmitted acutely ill in April, 1928, and said she had miscarried shortly after her discharge in January. She now had an inflamed swelling at the upper end of the old abdominal scar which, a day or two later, discharged pus and faeces. This was opened and two fistulae into the intestine were repaired, but she died of intestinal obstruction. At the necropsy a rupture was found in the old uterine scar, and the foetal bones were found in an enlarged loop of the small intestine just below the loops in which the fistulae had been repaired.

Mr. N. L. EDWARDS (Derby) described a case of uterine fistula following Caesarean section.

The patient, aged 25, had had a Caesarean section performed for obstructed labour in 1923; the convalescence from this was uneventful, no rise of temperature being recorded. A year later the upper end of the wound broke down, discharging a small quantity of pus. The sinus persisted and after May, 1928, menstrual fluid escaped from it at the menstrual periods, which were regular. In September, 1928, the fistulous track was excised entire, together with a wedge of the anterior uterine wall in which were embedded two thick silk sutures. Sections of the fistulous track showed no evidence of endometrioma. The case illustrated the dangers of unabsorbable sutures in the uterine wall.

Considerable discussion followed, several members expressing the opinion that it was the method of suture rather than the material used which mattered in ensuring a well-healed uterine scar.

Professor CARLTON OLDFIELD recounted two cases of ruptured malignant ovarian cysts admitted as acute abdominal emergencies.

In each case when the abdomen was opened it was found full of "boiled sago" like material, which was mopped out and the ruptured cyst removed; both abdomens were reopened later and the rest of the generative organs were removed. Both patients had had prophylactic deep *x*-ray treatment since the operation. One patient had remained well for three and a half years, when she developed symptoms suggesting a recurrence. The other patient had a recurrence a year later in the transverse colon; fifteen months subsequently there was one in the jejunum, and now, another fifteen months later, one had appeared in the roof of the vagina involving the bladder.

Discussion was particularly invited on the use of prophylactic deep *x*-ray treatment, and on prognosis in malignant ovarian neoplasms. Several members expressed the opinion that deep *x* rays were not without danger, and that the prognosis in these cases was not so bad as was usually thought.

Professor FLETCHER SHAW (Manchester) read notes on a case of uterine diverticulum in a patient, aged 34, who had been married for eight years and was sterile.

She complained of recurrent severe pain in the left iliac fossa at the menstrual period. Examination revealed a mass the size of a small orange in the region of the left appendage. At an operation this mass was found to be a cystic left ovary. In the left broad ligament there was a hard tumour of regular outline, about 1½ inches long and 1 inch wide; its upper border was about half an inch below the round ligament and Fallopian tube, and in no way connected with either. It was enucleated from the broad ligament by a considerable amount of blunt dissection; the pole nearest to the uterus had to be cut out with scissors. Sections showed that the tumour had a thick outer muscular coat, and contained a cavity lined with endometrium, but with no retained blood. Its relation to and its entire separation from the round ligament and Fallopian tube precluded it from being described as a poorly developed uterine horn. Professor Fletcher Shaw considered it to be a diverticulum budded out from the uterine cavity, and then shut off therefrom.

Miss IVENS (Liverpool) recorded a case of puerperal gas gangrene infection.

A primigravida, aged 28, had had no ante-natal care, and came into labour one month after the expected date. Many vaginal examinations had been made and a forceps delivery attempted before she was admitted to hospital. On admission the maternal pulse was 128, the temperature 98° F., and the child was dead. There was a putrid offensive vaginal discharge; the cervix was three-quarters dilated and lacerated. Perforation and cleidotomy were necessary to effect delivery. The cervix and perineum were repaired; an intrauterine douche and an injection of antistreptococcal serum were given. The next day she received 20 c.cm. of the Weinberg antigangrene serum, and 20 c.cm. anticoli serum subcutaneously with saline solution. *B. aerogenes capsulatus* was recovered from the lochia by inoculation of a rabbit. The patient made an almost complete recovery, although the uterus remained high and fixed. Miss Ivens considered that when a woman after labour or abortion showed a yellowish tint and reddish urine it was probable that she was suffering from a severe gas gangrene infection. She recommended animal injection to identify the organism, and the early use of a powerful antitoxin.

OPPORTUNITIES FOR MEDICAL WOMEN ABROAD.

AT a meeting of the London Association of the Medical Women's Federation, held at the British Medical Association House on February 26th, with the president, Dr. HUXLEY, in the chair, the subject under discussion was "Opportunities for work for medical women abroad." Papers were read by Dr. M. E. JOHNSTONE (Canada) and Dr. K. ATKINSON (America), and letters on the subject were sent by Dr. Emslie Hutton (Near East) and Dr. M. Hickley (South Africa). Miss L. MARTINDALE and Dr. K. WARREN (Uganda) also contributed to the discussion. Dr. Johnstone spoke especially of the Province of Alberta, where she had been working under the Department of Public Health. There the opportunities were very good, as there was complete reciprocity in the matter of registrable qualifications; and, indeed, the Department of Public Health was now advertising for several women district medical officers to go out at once. The work was mainly among the women settlers. The infant and maternal mortality rate was at present excessively high, owing to the lack of medical facilities. The climate was one of extremes, but very healthy, and the whole province was in a state of rapid expansion and increasing prosperity. The prospects for Government medical work, or for general gynaecological practice in one of the larger towns, were very good at the present time, and would probably improve still more. Dr. Atkinson spoke of hospital work in the United States, especially (where her experience was greatest) in Philadelphia and San Francisco. After touching on the differences between the British and American hospital systems, she spoke hopefully of the prospects of gaining "intern" posts, and of the value of these, and the possibility of passing to resident appointments from them. Conditions on the whole did not appear to be vastly different from those prevailing in England. Dr. Emslie Hutton's letter was not encouraging for English women. Over the whole of the Balkan States and Russia there seemed to be practically no opening for their services, though for native qualified women there were numerous appointments. A few mission hospital appointments only were open to foreigners, but there was great opposition from officials. Dr. Hickley wrote of South Africa from two distinct points of view—namely, practice in large towns and "up country." The former was hopeful, as specialists were rare, and there was always scope for the running of a specialty in connexion with a general practice. She noted, however, that the supply of South African graduates was really sufficient for the needs of the country. Practice in the outlying districts she considered unsuitable for a woman, both on account of the difficulty of transport and the great distances that had to be traversed, and on account of the attitude of the natives. Mrs. Warren spoke of her work in Uganda, and implied that there was room for more women, but that up to the present the prospect had not seemed alluring, and practically none had applied. Government work was essential, as private practice did not yet exist. The British population was relatively very small.

Reviews.

SURGICAL PATHOLOGY.

THE textbook on *Surgical Pathology*[1] by Mr. CECIL WAKELEY and Mr. ST. J. D. BUXTON will probably attract particular attention, because works on that subject, although indispensable alike to students and practitioners, are comparatively scarce as compared with books on general pathology; of the latter there would appear to be almost a superfluity on the market. Practising surgeons, engaged in hospital work and teaching, and interested it may be in some special branch of surgery or in points of research arising out of their own cases, have little inclination to divert their interest into the work of a general survey; and probably few, other than born teachers, care to face the labour involved in so wide a field. In these days, therefore, a good book on surgical pathology is a thing to be prized. What a student expects to find in a work of the kind is a description which will help him to recognize any and every pathological condition or process that he is likely to meet with clinically, together with an account of its cause and possible consequences; and further, any points, although possibly of minor theoretical interest, which have a special bearing on surgical practice. To present these matters as simply and directly as possible, and in an attractive manner, is the aim which the authors have had in view, and as a practical, useful, and comprehensive guide to the subject, whether for students or practitioners, their book could not be bettered. Special care has obviously been taken with the index which is commendably full and clear.

In their preface, the authors, very properly, make no mention of examinations, but it would be unreasonable to suppose that even the serious student should take so disinterested a view of the subject as not to have the fear of the examination table before his eyes. He will naturally inquire how far the book is going to help him when confronted with a specimen which he has never seen before and which the examiner has studied beforehand. In order to acquit himself with comfort in these unequal conditions he will be wise to adopt the advice which the authors offer—namely, that if he uses their book he should do so in the museum and study it and the specimens together. Surgical pathology, they point out, cannot be learnt by means of mere verbal descriptions even with the aid of the best of illustrations; and as regards many surgical affections, those of the bones, for example, there is no place, other than the museum, where the subject can be properly and adequately studied. Students in this country are fortunate in having free access to the best museums in the world, and, if they adopt the advice given, they will find what is generally considered the laborious task of "going through the museum" much lightened and enhanced in interest.

The authors' manner of writing has a freshness and directness which certainly aids in maintaining interest; lengthy and verbose discussions on intricate pathological problems are avoided, and attention is concentrated on matters of immediate practical import. A word may be said with regard to the illustrations. It is notorious that, since the employment of photography in the illustration of medical works, constant use is made of figures which fail to show anything they are intended to show. This common blot on medical works has been scrupulously avoided by the authors; their illustrations are uniformly good and instructive, and it is to be hoped that the example thus set will be followed by others. The whole plan and execution of the work is good, and as the authors' position is a guarantee that the information contained in it is authoritative, there is every reason to think that the book will be used and appreciated. Students have long felt the need of a work of this kind, and it exactly meets the need.

[1] *Surgical Pathology.* By Cecil P. G. Wakeley, F.R.C.S.Eng., F.R.S.Ed., and St. J. D. Buxton, M.B., B.S.Lond., F.R.C.S.Eng. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1929. (Med. 8vo, pp. xvi + 904; 392 figures. 45s. net.)

AN INDEX OF SYMPTOMATOLOGY.

MESSRS. JOHN WRIGHT AND SONS of Bristol have recently issued *An Index of Symptomatology*[2] as a companion volume to their well-known series dealing with diagnosis, treatment, and prognosis. It is edited by Dr. H. LETHEBY TIDY in collaboration with twenty-five special contributors. The work aims at presenting for each disease a description of its clinical manifestations that will enable the practitioner to recognize a typical case, and the student to retain in his mind a picture of the condition in its most characteristic form. In general, this "index" follows the scheme of its companions, and, used in conjunction with them, it should help considerably in the solution of difficult diagnostic problems. The articles, which cover all branches of medicine, surgery, gynaecology, and the specialties, are tersely written and well up to date.

The book is illustrated with four beautiful coloured plates and a number of reproductions of photographs and charts. The radiograms are clear and convincing, though those depicting diseases of bone are, on the whole, more effective than the rest. The figures illustrating diseases of the skin are, however, not so instructive. It is doubtful if the appearance of even so characteristic an eruption as that of herpes zoster can be faithfully conveyed by a photograph in monotone. One realizes, of course, that the cost of production precludes the generous use of coloured plates, but in the illustration of skin conditions the expense of reproducing photographs hardly appears to be justified by their utility.

Dr. Tidy and his collaborators are to be congratulated on producing a volume worthy of the series to which it belongs.

MATERNITY AND CHILD WELFARE.

IN the preface to *Maternity and Child Welfare*[3] Dr. ETHEL CASSIE states that this work is primarily intended as a textbook for public health workers. During the last twenty-five years a new profession for women (that of health visitor), now numbering some thousands of trained workers, has come into existence. The Ministry of Health has gradually tightened up the qualifications till the necessary training has become a long and arduous one. A suitable textbook has been long overdue, and Dr. Cassie is to be congratulated on having, very largely, supplied the need. Most of the book is excellent; lucid, and easy to read, its teaching is simple and direct. Chapters on such subjects as health visiting as a profession, child welfare centres, ante-natal care, heliotherapy, and the minor ailments likely to be met with at school and special clinics, give just the facts which the public health nurse ought to know—facts which, hitherto, she has been unable to obtain except from scattered writings, or from lectures specially arranged for her benefit.

The section on breast-feeding might well have been extended. Little or nothing is said about such difficult problems as those of the nervous child (a condition which Cameron says is the cause of 50 to 60 per cent. of the failures in breast-feeding), of the early and obstinate indigestion described by Czerny, or of the management of the crucial period when the mother is resuming her domestic duties; and wet-nursing is hardly mentioned. On these matters health visitors can hardly have too much information. Dr. Cassie's teaching as to the time taken in emptying the stomach, and its bearing on the right spacing of feeds, is curiously indecisive. Though advising three- or four-hourly feeds, she says there is very little left in the stomach at the end of two hours, and that regularity of feeding is more important than actual spacing; the reasons given for longer intervals being the trouble in preparing the feeds, the disturbance of the child's sleep, and the peristalsis induced by too frequent feeds. Health visitors might well have been provided with a stronger armoury

[2] *An Index of Symptomatology.* By various writers. Edited by H. Letheby Tidy, M.D.Oxon., F.R.C.P.Lond. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1928. (Sup. roy. 8vo, pp. xii + 710; 130 figures, 4 plates. £2 2s. net.)

[3] *Maternity and Child Welfare.* By Ethel Cassie, M.D., Ch.B., D.P.H.Ed. London: H. K. Lewis and Co., Ltd. 1929. (Demy 8vo, pp. viii + 228; 13 figures. 8s. 6d. net.)

than this for their difficult campaign against the traditional two-hourly feed. Leven, Barrett, and Ladd have shown that even in healthy breast-fed babies a considerable residue often remains in the stomach long after the expiration of two hours; and it is certain that indigestion, brought about by two-hourly feeds, is a frequent cause of inefficient suction and premature weaning. In the section on milk mixtures some of the quantities are obviously incorrect, which must tend to confuse non-medical readers. Cod-liver oil is recommended instead of additional cream or butter in the feeds (as much as 9 or 10 drachms in twenty-four hours for a baby weighing 14 lb.). In a textbook intended for non-medical women is it quite wise to advise such mixtures for continued use, especially in view of the warnings of Mellanby, and, more recently, of Agdur, as to the toxic effects of the oil in large or long-continued doses? Dr. Cassie speaks of additional feeds after a breast feed as "supplemental"; other writers speak of them as "complemental," reserving "supplemental" for full feeds given instead of breast-feeds. Cannot we get some agreement?

There are indications of hasty proof-reading throughout the book, but, as a whole, it is well written, and suitable for the purpose for which it is designed.

DETERMINATION OF HYDROGEN IONS.

THE third edition of Professor MANSFIELD CLARK'S well-known monograph on *The Determination of Hydrogen Ions*[4] has just appeared. As regards its quality it is sufficient to say that it maintains the high standard set by the previous editions. The author, in his preface, hints, however, that the book is in danger of being killed by its own success. The measurement of hydrogen-ion concentration has attained a remarkable and increasing popularity, a popularity that is very largely due to the work and writings of Mansfield Clark. In consequence the literature on the subject is expanding to unmanageable dimensions, and the author suggests that in a few years it will be as hopeless to recount all aspects of the utilization of the determination of hydrogen ions as it would be to note all the uses of thermometry. Again, the author expresses some dissatisfaction with his work on the grounds that the material has far outrun the range of the subject and the depth of treatment that can be encompassed. This dissatisfaction will not, however, be shared by his readers, for the writer expounds his difficult subject in a clear and readable style, and always succeeds in preventing the general principles from becoming lost in masses of technical detail. The main portion of the book treats of the general principles and technical details of the methods by means of which the hydrogen-ion concentration is determined. In a summary of thirty pages at the end the special applications of the method are mentioned. Then follows a bibliography of nearly a hundred pages, and the work concludes with an appendix containing tables of useful mathematical constants. Throughout the book all the most recent advances in technique are recorded, and the important ones are described in full working detail; this indicates that a vast amount of labour has been expended in the preparation of the new edition. The same point receives further confirmation from the fact that considerably more than half the references are to works published subsequent to the appearance of the last edition in 1924. Professor Mansfield Clark says in his preface: "Partly because the literature is what it is, the subject is not here presented as I conceive some genius will some day present it—with brilliant simplicity, and withal, rigidly." The readers of this book will, however, agree that in default of this hypothetical genius they are very thankful to possess the clear exposition given by the author. Moreover, if genius consists in a capacity for taking infinite pains, then Professor Mansfield Clark has earned the title very thoroughly.

We have also received a small book[5] written in German by Dr. GUNTHER LEHMANN, containing a careful and scientific study of the hydrogen ion from both the theoretical and practical standpoints. It can be commended, particularly to physicists, chemists, and bacteriologists. Numerous diagrams and illustrations of apparatus are provided, and the subject-matter is set out clearly, compensating to some extent for the absence of an index.

[4] *The Determination of Hydrogen Ions.* By W. Mansfield Clark, M.A., Ph.D. Third edition. London: Baillière, Tindall and Cox. 1928. (Med. 8vo, pp. xvi + 717; 100 figures, 1 plate. 30s. net.)

[5] *Die Wasserstoffionen-Messung.* Eine erste einführung von Gunther Lehmann. Leipzig: J. A. Barth. 1928. (Med. 8vo, pp. viii + 141; 52 figures. R.M.13.50.)

THE MEDICAL HISTORY OF CANADA.

DR. JOHN J. HEAGERTY of the Canadian Department of Health compels admiration not only for the amount of research involved in his two-volumed book *Four Centuries of Medical History in Canada, and a Sketch of the Medical History of Newfoundland*,[6] but also for the skill with which he has enlivened details that might otherwise have been dry as dust. As well as dealing with a lengthy period, this standard work covers a wide field of subjects, and, as Mr. A. G. Doughty remarks in a brief preface, the light it casts on the national history will interest the general reader. The early records of disease available for this history are fortunately very full, since the Jesuit missioners took meticulous notes and forwarded them to the headquarters of the Order in France, where they were carefully preserved. The subject-matter occupies eighty-four chapters, and the six parts into which the two volumes are divided deal with the epidemics of disease, the pioneer medical men, medicine and surgery, public health, the medical schools, and hospitals, the first of which was the Hôtel-Dieu at Quebec, opened by the French in 1639. The sketch of the medical history of Newfoundland, forming an appendix of about twenty pages, is a reproduction of an address given in 1925 by Dr. L. E. Keegan, president of the Newfoundland Medical Society.

Rather more than half of the first volume is devoted to the consideration of the following epidemic diseases: scurvy or mal de terre, small-pox, yellow fever or mal de Siam, plague, ship-fevers, mal de la Baie St. Paul, leprosy, cholera, and influenza. Scurvy was the first disease mentioned by the early explorers of the continent, and it attacked them as well as the Indians, who, however, had a remedy in the bark of a tree called "annedda"; interesting descriptions of its ravages are quoted from Jacques Cartier and Champlain. Small-pox appeared with the advent of white settlers and exterminated whole tribes of Indians, who suspected the Jesuits of causing it by witchcraft, and therefore tried to take their revenge. Inoculation was introduced about 1768, and vaccination as early as 1798 by John Clinch, a friend of Jenner. The Indians, who had the opportunity of this protection in 1806, did not take kindly to it, and indeed small-pox still exacts its toll from them. A specially interesting account is given of what was known as St. Paul's Bay disease, because it began in that locality about 1773; though presenting anomalous symptoms, it was regarded as syphilis, because of the curative effect of mercury. Before their contact with white settlers the Indians appear to have had few diseases, scurvy and eye affections caused by the irritation of the smoke in their dwellings being the commonest; whereas infections such as measles, scarlet fever, typhus and typhoid fever, diphtheria, venereal disease, and possibly tuberculosis were importations. The record of the pioneer medical men in the various provinces sometimes throws a curious light on their activities; thus Bonnerme, the first doctor to visit Quebec, narrowly escaped hanging for implication in a plot to poison Champlain, only to die the next year of scurvy. Michel Sarrazin (1659–1734), the most famous surgeon of his time in Canada, and a naturalist, described the beneficial effects on small-pox of an infusion of the roots of the pitcher-plant, called after him *Sarracenia canadensis*. The first medical journal in Canada—*Journal de médecine de Quebec*, published both in French and English—appeared in 1826 and survived for two years; the first medical society also started in the same city in 1826. Ether anaesthesia was first tried early in 1847 in Montreal, and chloroform in the following year in Quebec. The growth of public health is traced from the seventeenth century in

[6] *Four Centuries of Medical History in Canada, and a Sketch of the Medical History of Newfoundland.* By John J. Heagerty, M.D., D.P.H. With a preface by A. G. Doughty, C.M.G., F.R.S.C. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1928. (6½ × 9½; Vol. i, pp. xviii + 395; Vol. ii, pp. vii + 374; 38 illustrations. 50s. net the two volumes.)

detail, with accounts of quarantine arrangements, public health associations, and the development of vital statistics.

The sections on the medical schools and the hospitals, the sanatorium movement, and the care of the insane in the Dominion are mines of information, and an extensive bibliography and a good index complete the usefulness of this well-written work as a source of reference.

CLINICAL CHEMICAL PATHOLOGY.

A Handbook of Clinical Chemical Pathology,[7] by Dr. F. S. FOWWEATHER, is a short volume compiled for the special purpose of interpreting the work of the chemical pathologist to the clinician. Sir BERKELEY MOYNIHAN has contributed a foreword, and therein expounds very clearly the need for such a volume:

"This delegation of a part of the work involved in the application of laboratory tests from the clinician to a second person is perhaps unfortunate, but it is surely made inevitable by the growth of the subject. It has already been abused, and a system has to some extent grown up which has been rightly ridiculed as 'penny-in-the-slot diagnosis.' Here the clinician sends a specimen to the laboratory and expects to receive in return, not merely the result of the analysis, but also a brief diagnosis of his case. This abuse is due to the fact that the clinician has not sufficient knowledge to give him confidence to interpret for himself the results of chemical analysis and to incorporate them, along with the information he has gained from clinical examination of the patient, into a composite picture. The duty and the pleasurable task of making a diagnosis rests finally with the clinician, and never with the laboratory worker. It is with a desire to help the clinician to take advantage of laboratory methods in this way that the book has been written."

The author, in accordance with the purpose of this volume, has made no attempt to produce a handbook for laboratory workers, but has endeavoured to state concisely the nature and value of the more important methods used in clinical pathology. Among the subjects discussed are the acid-base balance, glycosuria, functional tests for the stomach, liver, and kidney, basal metabolism, calcium content of blood, and vitamins.

Pathological chemistry is a subject that has advanced very rapidly in recent years. The original literature on the subject is overwhelming in bulk, and most textbooks are so filled with technical details of laboratory methods as to be unreadable by others than specialists in the subject. These facts have made it extremely difficult for clinicians to keep in touch with the methods of pathological chemistry, which they nevertheless have had to employ. Dr. Fowweather's book should do much to remove the difficulty indicated, for it is written in a simple and easy style, and is so short that it can be read in an evening; but none the less it gives a clear and up-to-date account of the most important facts regarding the clinical value of pathological chemistry.

NOTES ON BOOKS.

THE issue of the *Medical Register*[8] for 1929 reveals the fact that the number of names added to it year by year continues to fall. The peak year of 1924, when there were 2,796 new entries, contrasts sharply with 1928, in which there was a decrease of 285 on the corresponding figure for 1927. The membership of the medical profession is still growing, however, and in 1928 amounted to 54,252. New registrations in England during 1928 numbered 859; in Scotland 404; in Ireland 217; and in the colonies and abroad 176. This total of 1,656 new entries compares with 1,941 in the preceding year. The number of names removed from the *Register* in 1928 was 1,038, as compared with 1,035 in 1927. Last year 845 names were removed on evidence of death, one due to cessation of practice, 188 because of failure to comply with the inquiries of the Registrar as to cessation of practice or change of address, while 4 were struck off under the disciplinary powers conferred by the Medical Act.

The *Dentists Register*[9] for 1929 contains 14,388 names, of which 6,824, or 47.43 per cent., are registered with medical, surgical, or dental qualifications. This compares with 6,788, or 46.57 per cent., so registered in the previous year, out of a total of 14,576 on the *Register*; the remainder in each case were registered under the provisions of the Dentists Acts of 1878 and 1921. Of the 264 new names added to the *Register* in 1928, 239 were registered with qualifications and 22 under the Dentists Act of 1921; this reveals a sharp decline from the numbers of the previous year—362 and 38 respectively. The number restored to the *Register* under the Acts of 1878 and 1921 was 251, and the number removed for this reason, or because of death, was 703. The useful local address list of previous years appears again, and indicates the dentists practising respectively in each postal district of London, each town or village of the United Kingdom, each town or country abroad, and in each of the Services.

The *Medical and Dental Students Register*,[10] issued by the General Medical Council, shows that the number of new medical students registered in 1928 was 1,363, which is 149 more than in the previous year. Scottish registrations numbered 577, an increase of 38. There were 545 English registrations—an increase of 42—and 241 Irish registrations, as compared with 172 in 1927. Dental students registered in 1928 numbered 256, an increase of 12 on the previous year.

A recent addition[11] to the "Notable British Trials" series deals with the case of Eugene Marie Chantrelle, who was executed in Edinburgh in 1878 for the murder of his wife by the administration of opium. Chantrelle in the first instance succeeded in creating the impression that death was due to poisoning caused by an undetected escape of gas in her bedroom. A *post-mortem* examination, however, showed no signs of coal-gas poisoning nor any evidence of the cause of death; analyses of vomit stains on bedding and on clothes worn by Madame Chantrelle, however, were found to contain considerable quantities of opium. This factor, coupled with evidence of the undoubted viciousness of the accused, and of the fact that he had a short time before insured his wife's life for a substantial sum—the policy taking effect only in the event of her death by accident—made his conviction certain. While medical evidence inevitably bulked largely in the proceedings at the trial, the matters dealt with are hardly of first-rate medico-legal importance to-day, and the main interest in the book centres round the character of Chantrelle, who appears to have been a villain of the type commonly depicted in old-fashioned melodrama—a man of good family and education, accomplished and intelligent, but ruthless, unscrupulous, debauched, and dishonourable.

In an attractively illustrated volume entitled *The Sack-'em-up Men: An Account of the Rise and Fall of the Modern Resurrectionists*,[12] Dr. JAMES MOORES BALL of St. Louis first summarizes the history of anatomy, thus touching one province of Dr. Charles Singer's authoritative writings, and then enters on his real subject, the activities of the body-snatchers, resurrection men, or sack-'em-up men who, a hundred and more years ago, provided the material for anatomical teaching in this country. He gives also some information about anatomical instruction in North America, including the "resurrection," as recently as 1878, at the Ohio Medical College, of John Scott Harrison, the son of one President and father of another President of the United States, the true story of which, he says, will not be published in our day. This monograph is dedicated to the Council and Fellows of the Royal College of Surgeons of Edinburgh, where the author collected illustrations and much of the material so well utilized here in these pages. The term "resurrection days" is applied to the period when the Irish, Scottish, and English teachers of anatomy were obliged by the existing state of the law to employ grave-robbers, who were not deprived of their occupation until the passing of the Anatomy Act in 1832, introduced by Henry Warburton. The familiar story of Burke and Hare a hundred years ago is accompanied by an account of the words "burking" and "burkism," and by many photographs, including a striking caricature of Robert Knox. The tragic story of the ruin of Knox is fully told; he was regarded by Lord Cockburn as one of the least culpable of the anatomists of his time; in fact, it was only an accident that saved Monro tertius from sharing his fate. Under the title of "respectable resurrectionists" some of the greatest names, such as Vesalius, John Hunter, Liston, and in America Valentine Mott, are included. For this well-written monograph the author has read widely, and with a light hand conveys much historical lore.

[7] *A Handbook of Clinical Chemical Pathology.* By Frank Scott Fowweather, M.D., M.Sc., D.P.H. With foreword by Sir Berkeley Moynihan, Bt., K.C.M.G., C.B. Churchill's Empire Series. London: J. and A. Churchill. 1928. (5¼ × 8¼, pp. xii + 216; 19 figures. 8s. 6d.)

[8] *The Medical Register, 1929.* London: Published for the General Medical Council by Constable and Co., Ltd. 1929. (21s.)

[9] *The Dentists Register, 1929.* Published for the Dental Board of the United Kingdom by Constable and Co., Ltd. 1929. (12s.)

[10] *Medical and Dental Students Register, 1929.* London: Published for the General Medical Council by Constable and Co., Ltd. 1929. (7s. 6d.)

[11] *Trial of Eugene Marie Chantrelle.* Edited by A. Duncan Smith, F.S.A.Scot., advocate. Notable British Trials. Edinburgh and London: W. Hodge and Co., Ltd. 1928. (Demy 8vo, pp. 243; illustrated. 10s. 6d. net.)

[12] *The Sack-'em-up Men: An Account of the Rise and Fall of the Modern Resurrectionists.* By James Moores Ball, M.D., LL.D. Edinburgh and London: Oliver and Boyd. 1928. (Med. 8vo, pp. xxxi + 216; 19 figures. 60 plates. 16s.)

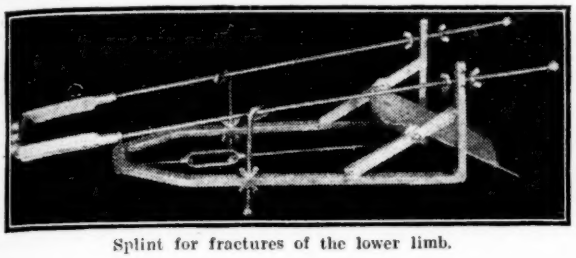
PREPARATIONS AND APPLIANCES.

IMPROVED SPLINT FOR TIBIA AND FIBULA FRACTURES.

DR. J. R. ATKINSON (Vancouver, British Columbia) writes:

My experience and the experience of others in the handling of fractures of the tibia and fibula has shown me the great difficulty, and in some cases the impossibility, of getting proper extension of the tibia and fibula and of holding them when correction is made. This led to the development of the splint shown and described herewith. After using it on every case of fracture of the lower limb which has come under my care during the past few years, and observing it in use by other doctors, I am able to state that results have been good.

The splint is for a fractured lower limb, and is designed to provide such support for the limb that the fractured ends

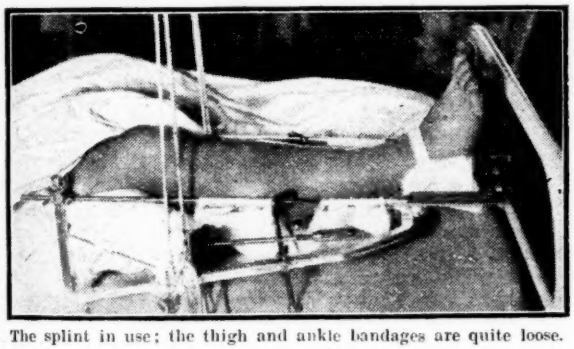


Splint for fractures of the lower limb.

may be drawn apart and readily adjusted, during which adjustment free access is afforded to the location of the fracture. When both bones of the lower leg are fractured the broken ends will, under the tension of the muscles, tend to overlap one another, and difficulty is experienced in applying the required tension to bring the fractured ends into their correct relative position, or when support is afforded from the crotch, without an exceedingly uncomfortable and painful pressure applied on this part, which is not adapted to receive such pressure.

In this splint the required resistance for the tension applied to draw the fractured ends of a broken leg to their proper position in relation to one another is imposed on the underside or back of the thigh, adjacent the knee-joint, the axis of the thigh being angled to that of the leg to provide a suitable resistance. The splint frame, by which the tension is imposed on the leg and the resistance of that tension distributed, is so designed to afford free access to the leg at the location of the fracture for an inspection of it generally, or by *x* rays, and for manipulation, or for attending to any open wound on any part of the leg or foot. The uprights may be adjusted to impose the required torsion or twist on the limb to bring the fractured ends together.

It will be noted that the angle at which the leg is held in relation to that of the thigh may be adjusted by the turnbuckle, which alters the angle of the inclined plane; this will



The splint in use; the thigh and ankle bandages are quite loose.

also alter the anterior or posterior alignment of the bones. Such parts of the splint as are directly connected to the limb are adjustable so that it may be adaptable to variation in the size of the limb it may be required to be used on.

The splint is not only convenient for the operator, as it offers ample facilities for inspection and manipulation of the fractured limb, but it is also comfortable for the patient. As the splint firmly attaches the injured leg to the thigh, and to no other part, the patient has freedom of movement, and can assume the position which is most comfortable; it permits the patient to use a wheel-chair, and to assume a sitting posture in bed if desired. As a first-aid splint it is convenient and safe, as anyone in a factory or camp can apply it temporarily (over boot and clothing) to a fellow worker to prevent further injury while the patient is being moved to a hospital, thus eliminating serious complications which often arise after an accident. The limb cannot slip or get out of place, freedom of motion is allowed the rest of the body, and the limb can be placed under the fluoroscope and the fractured ends be seen as they are being pulled into their correct position. After setting, the splint is locked, and the fractured leg may be comfortably supported from the bed on a Balkan frame or other swing. Radiographs can be taken as often as required while the limb is in the splint. Physiotherapy, careful massage, and stimulation with a faradic current or lamp can be practised.

The frame is made of burnished aluminium, and the complete splint weighs about 5½ lb. It has ample strength, and is simple and positive in operation. The advantages claimed are: (1) prevention of shortening and deformity; (2) lessens danger of knee- and ankle-joint stiffness; (3) lessens danger of atrophy of leg muscles; (4) time required for recovery is materially shortened; (5) comfort for the patient; (6) convenience and assurance for the operator.

MILK PREPARATIONS.

We have received a series of samples from the West Surrey Central Dairy Company. During recent years knowledge of infant feeding has advanced rapidly, and this company are putting on the market a number of substances which have been prepared in accordance with the results of recent research on infant nutrition. These preparations should prove a great convenience to the medical profession, for it is always difficult, and often impossible, to prepare privately many of the special mixtures for infant feeding that have been proved to be of benefit in institutions.

Cow and Gate Milk Food is a dried milk manufactured from pure English milk. It is made in two strengths—namely, half cream milk and full cream milk. The makers point out that dried milk has a special value for infant feeding in tropical and sub-tropical countries. They quote evidence that the milk available for purchase in India is very frequently adulterated and contaminated, and that the use of dried milk reduces the risk of dysentery and diarrhœa from fly infection.

Brestol.—The makers argue that "Hitherto, when it has been found necessary to apply modification in infant feeding, the physician has had to resort to dairy creams of uncertain composition, or to emulsions of an unsatisfactory character. Dairy cream, with its uncertain fat, and protein, and preservative content, with its doubtful bacteriological (including tubercle) content, and with its questionable vitamin activity, has also the disadvantage of bad keeping qualities; whilst in most emulsions full cognizance has not been taken of the necessity for supplying to the infant a cream possessing properties and characteristics identical with those of healthy breast milk." They have therefore prepared an emulsion of fats which has a saponification number and iodine number identical with those of human milk. Fat-soluble vitamins and orange juice have been added. The manufacturers claim that brestol is a product "which is easily and accurately prescribed, readily digested and assimilated, and which will be found invaluable in all cases of infant feeding and diet rectification."

Lacidac is a preparation of dried milk to which lactic acid has been added so that one pint of milk will contain one fluid drachm of lactic acid *B.P.* The preparation is made in two strengths—namely, separated (1 per cent. fat) and half cream (16 per cent. fat). This preparation is made in accordance with the researches of Marriott (*Journ. Amer. Med. Assoc.*, 81, 2007; 89, 862), who found that marasmic children frequently suffered from deficient gastric acidity, and that the administration of lactic acid milk reduced the mortality of such infants from 78 per cent. to 26 per cent.

Haemolac is dried cow's milk to which a small quantity of iron has been added (0.55 per cent. iron and ammonium citrate in dried milk). Cow's milk only contains about one-third the iron content of human milk, and Mackay (*Arch. of Dis. in Childhood*, 3, 117, 1928) showed that whilst the normal haemoglobin percentage in the blood of infants from 4 months upwards was at least 80 per cent. of the adult normal, yet 25 per cent. of artificially fed infants fell below this standard. She found that administration of a medicated milk of the same formula as haemolac produced a striking benefit. The iron content of haemolac, which is about 200 mg. Fe_2O_3 per 100 grams, is far higher than that of human milk, which is 4 mg. Fe_2O_3 per 100 grams of dry substance, and the iron causes the stools of the infants to turn black. Haemolac is recommended for premature infants, babies under weight at birth, and anaemic babies. It seems to have been prepared on a basis of sound physiological and clinical evidence. In view of the great difference between the iron content of haemolac and of normal milk, it would, however, be interesting to know whether equally good results could not be obtained with a quantity of iron somewhat nearer the normal content.

Lacquin is dried milk to which quinine has been added so that half a pint of prepared milk (breakfast cup) contains 2½ grains of quinine. The milk is also flavoured with coffee. This preparation is recommended as a method by which prophylactic doses of quinine can be taken by children or adults in a palatable form. Moreover, it provides an easy method of giving infants quinine in doses approaching the usual curative dose. The makers state, however, that children with malaria require relatively large doses of quinine, and that therefore additional quinine would be needed for curative treatment.

"EXANTHEMATIDES."

SECOND LETTSOMIAN LECTURE BY DR. H. W. BARBER.

THE second Lettsomian Lecture[1] by Dr. H. WORDSWORTH BARBER was delivered to the Medical Society of London on March 6th. Dr. Barber's general subject is dermatology in relation to other branches of medicine, and on this occasion he dealt with the nature and significance of a group of eruptions provoked by micro-organisms or toxins reaching the skin by way of the blood stream, to which eruptions he gave the generic name "exanthematides." Under this term were included the syphilides, tuberculides, and trichophytides, together with certain eruptions, some of which might be associated with rheumatic diseases, and for which the term "streptococcides" was suggested.

Syphilis, Tuberculosis, and Rheumatic Fever Compared.

Syphilis and tuberculosis, said the lecturer, were outstanding among diseases, if the specific fevers were excluded, for their ubiquity, their serious nature, their chronicity, and the amount of information collected concerning them, and they had dominated medical thought and research for generations; they still dominated dermatological thought and research over the greater part of the world, for syphilis and tuberculosis belonged in great part to the domain of dermatology. Rheumatic diseases also had cutaneous manifestations which were so closely akin to certain syphilitic and tuberculous eruptions in their mechanism of production and significance that one was able to draw from them deductions of the highest importance. The evidence that rheumatic fever was allergic in nature, and that the streptococcal group of organisms was responsible, seemed to the lecturer to be overwhelming; he had yet to hear any argument to the contrary that would bear examination. In all three diseases—syphilis, tuberculosis, and rheumatic fever—there was usually an initial lesion, and in all three there was a decided tendency to relapse, which seemed to be due to the breakdown of a partial immunity. In both tuberculosis and rheumatic fever the presence of lesions in the walls of the serous cavities or joints was accompanied by the outpouring of a sero-fibrous exudate. It was true that differences could be found between the three diseases, and in these differences consisted the peculiar features of the respective maladies. He was led, therefore, to submit a comparison between certain cutaneous manifestations of tuberculosis and syphilis, together with those of the severer forms of ringworm infection, on the one hand, and those of rheumatic or streptococcal infection on the other. All these eruptions might be conveniently classed together as "exanthematides."

The Syphilides, Tuberculides, and Trichophytides.

Taking, first, the syphilides, the lecturer pointed out that in the average case of undoubted syphilis there was first a period of incubation of about three weeks' duration; then a primary period, also of about three weeks, during which the spirochaetes multiplied locally, but the Wassermann reaction was negative; after this a second incubation period between the first appearance of the Wassermann reaction and the development of the secondary eruptions, when the various forms of secondary syphilides became successively less extensive, but larger in size, and the Wassermann tended to diminish; next a period of freedom from symptoms, with the Wassermann negative, and finally a tertiary period in which the Wassermann reaction was positive in from 60 to 80 per cent. of the cases. The secondary syphilides represented the allergic reactions of the skin against the spirochaetes.

Turning to the tuberculides, the lecturer said that although tuberculosis could not as readily as syphilis be divided into primary, secondary, and tertiary periods, nevertheless some such division could be made in the majority of cases. The term "tuberculides" was proposed by Darier in 1896 for a group of eruptions occurring in association with other manifestations of tuberculosis. The lecturer could not accept Darier's classification in its entirety, as, for example, the inclusion of the benign sarcoid or lupoid of Boeck, but in general, in the mechanism of their production, the tuberculides resembled the secondary and tertiary eruptions of syphilis.

With regard to the trichophytides, these were generalized eruptions, comparable with the others, occurring as a result of local infection of the skin with a ringworm fungus. As in the majority of cases of syphilis, there was a primary lesion of the skin, developing at the site of inoculation, as a result of which the skin as a whole might become sensitized. Only in the severer forms of suppurative ringworm were secondary eruptions likely to be seen. In some cases the eruptions were due to a dissemination of the fungus spores through the blood stream; in others they resulted from exogenous spread.

Allergic Reaction to Streptococcal Infection.

Some years ago, Dr. Barber continued, he had himself proposed the name "streptococcides" to designate certain eruptions which were allergic reactions to streptococcal infection, comparable to the other groups. Syphilis, tuberculosis, and ringworm were well-defined and established diseases, and a definite diagnosis of one or the other could usually be substantiated; but the streptococcal group of organisms was in a state of flux. Strains that in the laboratory were apparently identical might have very different pathological properties, and it was often impossible to furnish definite proof that a given condition was due to streptococcal infection. Nevertheless, the establishment of a group of streptococcides was justified by the evidence which had accumulated from independent sources during the last few years. The great interest of such a comparison lay in the fact that with certain types of cutaneous or subcutaneous reaction not only were the clinical appearances much the same whatever the organism represented, but the histological picture was similar in form, showing that the defensive allergic reactions to organisms might depend rather on the tissues infected than on the nature of the infection. All these eruptions which he had called the exanthematides were dependent on two factors: an allergic state of the skin towards the particular infecting organism responsible, and the conveyance to the skin of the organism or its toxin by the blood stream. They represented antibody-antigen reactions designed to destroy the organism or toxins *in situ*.

The lecturer discussed a number of types of eruption from the point of view of this classification. With regard to erythema nodosum—a term which, like erythema multiforme, was used loosely—he thought it was clear that this type of eruption was in rather rare cases a tuberculide, and, also rarely, a trichophytide, witness cases cited by Bloch and others. Erythema nodosum was probably not a specific morbid entity; in the majority of cases it was of streptococcal origin.

The Skin as a Defensive Mechanism.

The significance of the cutaneous and intracutaneous tests with tuberculin, trichophytin, and similar extracts the lecturer considered to lie only in affording evidence that the skin was sensitized to the specific antigenic substance of the infective organism. It followed that a positive reaction indicated that infection with a particular organism had taken place, and that there was continuous allergy towards it.

In conclusion, he wished to raise a question which to his mind was of profound interest and importance—namely, the extent to which, when active infection was present, the cutaneous manifestations of such infection constituted a protection against invasion of deeper organs. Might not the rash represent part at any rate of the body's campaign against the invading organisms, and recovery from an acute exanthem be partly dependent upon the rash? The evidence in favour of this view was strong. The popular idea that the eruption was an effort to drive out infection, and that care must be taken not to drive it in again, should not be too readily scorned as superstition. In the case of the streptococcides, could not the same defensive role against visceral damage be detected? The allergic condition of the skin was to some extent a protective mechanism against the involvement of the more vital organs.

[1] The report of the first lecture was published in the *British Medical Journal*, March 2nd, page 412.

British Medical Journal.

SATURDAY, MARCH 16TH, 1929.

THE STATISTICS OF MORBIDITY.

A DOCUMENT recently printed for the Health Section of the League of Nations[1] raises, both directly and indirectly, an interesting question—namely, whether records of sickness can be made to yield information of the same value as records of mortality. The document is an essay by the distinguished medical statistician Dr. E. Roesle of the Reichsgesundheitsamt, and his principal object is to provide materials for the preparation of a list of causes of morbidity designed to play a part like that played in the field of mortality statistics by the well-known International Classification of Causes of Death. Prima facie there is a strong case in favour of Dr. Roesle's proposals. Nobody now doubts the utility of international comparisons of mortality statistics (when made with common sense and discretion), or denies that an internationally agreed classification has increased the precision of such comparisons. It will also be generally agreed that, as causes of inefficiency and suffering, there are many definable forms of illness which make hardly any direct contributions to the statistics of mortality. Hence, it may be urged, international comparisons of morbidity rates may, from the hygienic point of view, be quite as important as comparisons of specific death rates.

Dr. Roesle points out that there is a lack of agreement between the several national and international authorities upon principles of classification, and, after a very careful analysis of the data of various health insurance offices in Germany and Hungary, as well as of seemingly comprehensive returns from Moscow, he makes detailed proposals which, *inter alia*, would help to remove some of the more glaring discrepancies between the data. This is a useful piece of work. It is certain that when the returns of two populations on approximately the same cultural and industrial level—for example, two industrial cities of the same State—give incidence rates of, say, "neurasthenia" differing by hundreds per cent., the medical practitioners in the two places are not using the word "neurasthenia" in the same sense, and it is possible that one may discover what is the surrogate term in the place with little "neurasthenia." If that possibility can be implemented, then the amalgamation of the two headings may permit of a useful comparison. These are all solid arguments in favour of such collations of data as Dr. Roesle has made; but it is possible that statisticians, being human, may have more faith in the power of their art of classification and analysis than it merits. We suggest that data of morbidity differ intrinsically from those of mortality. When a practitioner of medicine has watched an illness from its earliest stages to the death of the patient he can, in many instances, pass beyond a symptomatic to a complete diagnosis. But in minor illnesses, or even in serious illnesses only under observation at the beginning, that is not possible. It is easy for an office statistician, learned in official nosologies, to be contemptuous of the frequency with which "merely symptomatic diagnoses"—such as "debility," "nervous debility," "gastric catarrh"—occur in records of morbidity, and to urge the importance of more scientific definition. Actually much minor illness cannot be truthfully defined more strictly, and it is not scientific, but realistic, in a mediaeval sense, to pretend that it can. Chaucer's Doctor of Physic (if he knew his Galen as well as the poet said he did) had a more detailed nosological classification in his memory than even a student of 1929 on the eve of his final examination (we remember a distinguished surgeon saying that nobody but a student the night before the final "Conjoint" could precisely classify neoplasms). There is, we think, a danger that this realism may lead us to mistake a mere elaboration of ignorance—inevitable ignorance—for knowledge.

Since all available statistics of general morbidity (other than those of Russia) are based upon the records of insured persons, a large majority of whom are industrially employed, it is natural to expect that the analysis of the data should throw light upon the problems of industrial hygiene so much discussed. Certainly, in view of the dogmatic statements respecting the deleteriousness of this or that factor of industrial life often made without any evidence, light is needed. But an examination of some recent reports of the Industrial Fatigue Research Board would satisfy any reader that the study even of general morbidity—making but the broadest classifications by causes—is a very difficult matter. On February 19th Dr. A. B. Hill read, at a meeting of the Royal Statistical Society, a useful paper which illustrated some of the difficulties. He pointed out, *inter alia*, that "recorded" illnesses have a predilection for beginning on a Monday and ending on a Saturday. Whether this means that those who might have gone back to work at the end of the week did not, or that those who ought to have stayed at home on Monday decided to try not to lose more time, is an interesting point; the *fact*, whatever its interpretation, illustrates the distinction between data of recorded morbidity and of recorded mortality. Apart from traffic accidents, and the doubtful case of overlying of infants, there is no reason to suppose that one day of the week is more deadly than another.

We need not labour the point; it will be clear enough to practitioners of medicine. The time is past when careful classification of records and their accurate statistical analysis were sneered at as mere juggling with figures. That foolish attitude should not, however, be replaced by a belief that almost any records can be made scientifically comparable if only statisticians of sufficient eminence will classify and analyse them.

[1] C.H. 730. *Société des Nations—Essai d'une Statistique comparative de la Morbidité devant servir à établir les listes spéciales des causes de Morbidité.* Par Dr. E. Roesle. Geneva, 1928.

SCIENTIFIC LITERATURE.

THE latest edition of Mansfield Clark's classical work on *The Determination of Hydrogen Ions*, reviewed in another column, is full of valuable information, but there is nothing in the book of greater general interest to scientific workers than the figure, inserted in the preface, which shows the time distribution of the references contained in the bibliography. This figure shows that in 1910 about fifty papers were published on the subject of hydrogen-ion concentration, and that this number has doubled every four years, and now approaches 1,500 per annum. The curve suggests that the 2,000 level will be reached in another five or six years. As the author says: "The situation has made obsolete some of the old ideals of scholarship. It has made trivial all available facilities of library, abstract, and review. It has made the monograph almost futile. It has made ridiculous him who claims to combine thorough investigation with thorough *re*-search." In writing this Professor Mansfield Clark

conveys the experience and opinions of all who are compelled to cover popular fields of scientific research. Undoubtedly scientific workers are threatened with the necessity of choosing whether they will spend their energy and time in keeping up with the literature and writing monographs, or whether they will devote themselves to original research. Unfortunately, however, it is only those with a first-hand knowledge of a subject who can write a monograph that is worth reading, because such persons alone can sort out the grain from the chaff. It is a pity that Professor Mansfield Clark did not supplement his interesting curve by a second curve showing the number of papers per annum that were of any real importance; it is safe to say that the two curves would have followed very different courses.

There is no doubt that scientific workers will have to depend more and more on authoritative monographs for an account of the existing knowledge in any subject, and those who devote themselves to the tedious task of producing such works deserve the gratitude of their fellows. The flood of scientific literature is, however, being augmented unnecessarily, and it could be checked if public opinion in the world of science would show its firm disapproval of certain practices. The publication of substantially the same article in several different journals, and possibly in different languages, is, to say the least, a misdemeanour. Medical science in particular suffers from this practice. We have heard the suggestion that it would be checked if contributors were charged a special high advertisement rate for all articles that were found to have appeared elsewhere. The habit of estimating the merits of candidates for scientific posts or the activity of university departments by the weight of published material is also responsible for a large amount of over-publication, and this would cease if attention were paid to quality and not to quantity.

Finally, there is the problem of publishers who run scientific journals for profit, and aim at producing the greatest possible number of volumes a year, regardless of the quality of the articles published therein. This evil is not prevalent in this country, but it is rampant in Germany. The funds and shelf space of libraries are exhausted by certain "wastepaper basket" journals, whose volumes increase yearly in geometrical progression. There is only one remedy for this—namely, the organized boycott of journals which do not maintain a certain critical standard of editorship. Such a boycott has been mooted before now, but it has failed because there are so many libraries in Europe, and particularly in America, to whom expense is of less consequence than the completeness with which they cover the literature of science. The exploitation of scientific institutions in this manner will only be prevented when it is generally recognized that the encouragement of a scientific journal that maintains no critical editorship is not merely a waste of money, but actually handicaps the progress of science.

THE LOCAL GOVERNMENT BILL: CONSULTATION WITH THE PROFESSION.

THE suggestion made by Lord Dawson in the course of the consideration of the Local Government Bill by the House of Lords that a clause should be inserted requiring the council of a county or county borough to consult with (1) any body in its area representing voluntary hospitals or their medical and surgical staffs, and (2) any body in its area representing the general body of the medical profession, before settling its administrative arrangements, has been received sympathetically by the Government. We believe there is no doubt that the former of these suggested consultations will be imposed on the councils; but we would strongly urge the Government to accept for inclusion in the bill in its proper place the latter consultation also. It is of vast importance that private medical practitioners, whether general or consultant, should be brought into intimate connexion with the public health services, and a provision such as that indicated would be a very great advance in this direction: it would in many cases prevent local difficulties which are apt to render the public health medical services much less efficient and useful to the public than they should be.

THE LEAGUE OF NATIONS AND THE OPIUM QUESTION.

FULL particulars of the astounding case of illicit trafficking in morphine, heroin, and cocaine, to which reference was made in the *Journal* of February 2nd (p. 213), are vouchsafed in the report to the Council of the League of Nations of the twelfth session of the Opium Advisory Committee, just published. The intermediary in this huge contraband enterprise was the Chemische Fabrick Naarden at Bussum, a few miles south-east of Amsterdam. During the year 1927 and the first half of 1928 nearly 1,000 kilograms of morphine, 3,000 kilograms of heroin, and 90 kilograms of cocaine, mainly derived from Basle, Mannheim, and Hamburg, were re-exported, chiefly to the Far East, Shanghai being the most common destination. The committee remarks that this factory at Bussum "probably dealt with about half the total annual world production of heroin," the alkaloid regarded as the most perilous in its illicit use, and whose manufacture is now prohibited in the United States. This centre for international contraband, now suppressed, appears to have escaped detection partly by these narcotics being treated as "in transit," and therefore not appearing in the statistics of import and export, and partly by their incorrect description as "pharmaceutical products," "mediums," or "perfumeries." Indeed, "every contrivance was used to render inquiries into the origin of the narcotics impossible." This traffic was admittedly "contrary to the spirit of the law" and to the terms of The Hague Convention of 1912 and that of Geneva of 1925. It serves abundantly to prove that the production of these dangerous drugs is grossly in excess of any conceivable medical or legitimate requirement, and amply justifies the contention of China that smuggling of European alkaloids into that country demands no less scrutiny than the exports of opium out of it. The Advisory Committee encounters grave difficulty in regard to the production of opium by the failure of Persia and Turkey, which probably between them raise a million kilograms of opium annually, to favour the League with any reports of their traffic. It is further deplored that "more than one-half of the States members of the League, including six members of the Council, have not yet ratified the Geneva Opium Convention of 1925." The committee gave consideration to a scheme, which has been adopted in Spain and is supported by the United States, for notification in advance by each State of its requirements of each of the drugs for a determined period. Reference has previously been made to this scheme in the *Journal*, but the committee did not think it advisable to take any action in regard to it. The new Permanent Central Opium Board met for the first time at Geneva during the sittings of the Opium Advisory Committee, and the possibility of overlap in their duties by the two bodies was considered, but no decision was arrived at in regard to the delimitation of their respective functions.

PARASITIC PROBLEMS OF THE WEST INDIES.

In discussing some of the parasitic problems of the British West Indies at a meeting of the Section of Tropical Diseases of the Royal Society of Medicine on March 7th, Dr. T. W. M. Cameron pointed out that these islands, once the most important British colonies, now form a backwater of the Empire, and, apart from Jamaica, Trinidad, and Barbados, lie off the main steamship lines. The Lesser Antilles form a double crescent from Trinidad in the south to St. Kitts in the north. The inner range is volcanic, and the outer coral, while Trinidad is largely composed of metamorphic rocks. All are tropical, but the intense summer heats are mitigated to a great extent by the trade winds. The rainfall is abundant, and all except the most southern are liable to visitations from very severe hurricanes, which do an enormous amount of damage. The important industries are sugar, cocoa, coconuts, spices, sea-island cotton, and citrous fruits; while Trinidad has besides a very profitable oil industry. In general, the water supply is good and the sanitation poor, but exceptions to both exist. Port of Spain, for example, is one of the most sanitary and up-to-date cities in the tropics, with an excellent water supply and water sewage. In Antigua much has been done to improve the very deficient water supply, and nowadays it is fairly adequate. The important diseases are tuberculosis, intestinal diseases, venereal disease, and yaws. Malaria is common, and a number of very troublesome animal parasites abound. Among the important insect pests are mosquitos of all kinds—the yellow fever mosquito being particularly active, although the disease itself is now absent. Sand-flies, larval mites, and jigger fleas also combine to worry the stranger, and in some islands extra assistance is rendered by snakes and blood-sucking bats. Malaria is endemic in all the islands except Montserrat and St. Kitts. Until 1927 it was absent also from Barbados, but in that year a serious outbreak occurred, and it has not yet been stamped out. Filariasis appears to be absent from Trinidad and Grenada, but it is very common in some of the other islands—especially Barbados, Antigua, and St. Kitts. Everywhere it is decreasing, and, as mosquito control continues to be energetically prosecuted, it should ultimately be stamped out. One of the commonest parasites in all the islands is *Ascaris lumbricoides*, the common roundworm, and locally it is attributed with considerable disease-causing properties. A similar worm, morphologically at least, occurs in pigs in many parts of the world; yet it is a curious fact that in the West Indies, where faeces disposal is poor, and where pigs are given every opportunity to become infected from human sources, the parasite scarcely ever occurs in pigs. It seems highly probable, therefore, that the human and porcine varieties of ascaris are quite distinct physiologically, and not mutually infective. *Schistosoma mansoni*, discovered in 1902 by Sir Patrick Manson in a patient from the West Indies, while present in many foreign islands, has only been notified from three British possessions there—Antigua, St. Kitts, and St. Lucia—and in the last instance only three cases have been reported. In Antigua the disease does not appear to be a severe one, and Dr. Cameron found no infected snails, although he was able experimentally to infect the *Planorbis* so common in the only stream in the island. In St. Kitts, on the other hand, in places where the parasite occurs there is a 20 per cent. infection; it is found, however, only in villages beside the permanent streams, and as there are no more than three of these the general health of the island is only slightly affected. St. Kitts is overrun with African monkeys, and these are infected too—but here again only near the streams. This raises an undoubted complication in eradication, as therapeutic measures alone, effective as they can be in the case of this parasite, cannot eradicate a disease in which there is a wild reservoir host. Snail eradication is the only method at present available. Hookworm disease is present in about 60 per cent. of the population in the southern islands, but is rare in those north of Guadeloupe. In Barbados—a coral island with a clay highland area on the windward side—there is an infection of 20 per cent. on the coral and 65 per cent. on the clay. In Antigua, an island with a coral belt, a clay belt, and a volcanic mountainous belt, the distribution is respectively 6, 12, and 32 per cent. This and ascaris are both potent factors in causing debility, anaemia, and general lack of energy. Both are carried by faeces, and both could be eradicated by an efficient sanitary system. It is difficult, however, to get the natives to use latrines, even where available, and unless the latrine habit can be cultivated no amount of treatment will eradicate the disease. This implies education and sanitary propaganda—a much more difficult task than it would appear at first sight, owing to the mentality of the peasants. It requires the judicious spending of considerable sums of money, and as most of the islands, except Trinidad, are in a poor state financially (which was accentuated by the recent hurricane), the prospects of eradication are not too bright. However, Canada has become interested in these islands, and she may be able to increase their prosperity. The authorities, civil and medical, are well aware of their responsibilities, but money is lacking, and there is little co-ordination among the islands. The suggestion of Sir Patrick Manson for a medically trained governor-general for all the colonies in this area is one which still merits serious consideration. Without health prosperity is impossible, and if the striving after health and after prosperity were both controlled by one person much could be done.

ESTIMATION OF ABILITY.

In 1927 the Medical Research Council published a report[1] embodying the results of a study in vocational guidance conducted during the period 1923–26 jointly by the Industrial Fatigue Research Board and the National Institute of Industrial Psychology. This experiment, the first of its kind to be carried out in Great Britain, was planned so as to demonstrate the possibilities of vocational guidance—in other words, to determine as completely as possible the nature and interrelation of the personal qualities of each child under investigation, rather than to obtain results of definitely practical value. It was limited accordingly to the study of only 100 children. In 1924, however, continuance of the research on a much larger scale was made possible through the generosity of the Carnegie United Kingdom Trust, and Mr. F. M. Earle, of the National Institute of Industrial Psychology, has carried out an investigation involving the comparison of a group of 600 children, each subjected to various kinds of intelligence tests, and on this basis given vocational guidance, with a similar untested control group about whose occupations no recommendations were made. The following up of these two groups to determine the success or failure of each individual child in relation to the vocational advice he has received, or to the vocation he has chosen independently, is still proceeding, and the results will not be ready for publication for some little time. Meanwhile, however, the Medical Research Council has issued a report,[2] prepared by Mr. F. M. Earle and his fellow workers, on the use of performance tests—that is, of tests in which intelligence is measured by the performance of some specific act, and without recourse to language, either oral or written—in vocational guidance. In this report the results of

[1] Report No. 53. London: H.M. Stationery Office. 1926. 4s. net.

[2] Report No. 53. The Use of Performance Tests of Intelligence in Vocational Guidance: An Investigation conducted for the National Institute of Industrial Psychology. By F. M. Earle, M.Ed., B.Sc., M. Milner, B.Sc., and other Members of its Staff. London: H.M. Stationery Office. 1929. 2s 6d. net.

performance tests have been analysed, first to determine whether they are satisfactory instruments of measurement, and secondly, to discover the basic abilities required to carry them out successfully. The use of performance tests has been advocated for several reasons. They are of value in the examination of children at low mental levels, and of children who may be unacquainted with the particular language it is decided to employ. The Binet tests favour children with verbal fluency, who may, however, be lacking in qualities of reasoning, judgement, and foresight. Though these tests may bear a close relation to the abilities demanded for success in school, they often give little indication of a child's prospects of success in occupational life. It is found, furthermore, that some children are more interested in the concrete situation involved in the performance tests than in the more abstract problems set by the verbal tests, and are likely, therefore, to put more effort into their solution. The children studied were at school-leaving age, the great majority being just under 14, and the performance tests used were revised from the series described by F. Gaw,[1] and standardized by her for English children. It was found that as affording a "composite" age scale the complete series of tests had its limitations, and that the tests could not be combined into a satisfactory single "total score." Accordingly, an endeavour was made to determine the exact part played by general intelligence in securing success, and to obtain information as to the relative importance of the specific abilities involved. It was found that abilities measured by the tests did not, as appears to be the case with general intelligence, develop uniformly from age to age. Using the mental age method of interpretation, a boy or girl may have a mental age of 16 in one test and of 10 in another, which is confusing when the tests are measures of abilities other than, as well as of, intelligence. For each separate test it was necessary to differentiate between the relative parts played by general intelligence and by specific abilities in achieving successful performance. The investigation suggests that special abilities tend to show themselves more definitely at about puberty than previously. The composite mental age norm derived from the results of a number of performance tests is therefore held to be more reliable for younger children, whose success depends mainly on general intelligence, than for children at the age of 13 or 14. It may also be more reliable for girls who, in performing the tests, seem to use general intelligence rather than special abilities. The correlation coefficient of the performance tests with the Binet test was 0.94 for girls as against 0.44 for boys. That there is a factor common to all the performance tests is certain; but whether it consists only of the general factor common to all mental tests, or of this factor in combination with some group factor, cannot be decided on the evidence of the results so far obtained. The investigators record the fact that the situations created by the performance of the tests rouse significant reactions, the systematic observation of which is likely to prove valuable in determining whether or not the child is likely to develop suitable adjustment to particular kinds of work.

[1] Report No. 31. London: H.M. Stationery Office. 1925. 2s. 6d. net.

LORD FINLAY.

VISCOUNT FINLAY OF NOVAR, who died on March 9th, aged 87, will long be remembered as a great jurist who held the highest offices open to the profession of law. He was also (if the Scots phrase may be used of one so eminent) a "stickit doctor," having graduated M.B. at the University of Edinburgh at the age of 22. The early intention of making medicine his career was no doubt due to home influences, for his father, Dr. William Finlay, was a Fellow of the Royal College of Physicians of Edinburgh, and long enjoyed a good practice in that city. Robert Finlay, however, relinquished medicine soon after becoming qualified; he never practised, and his name disappeared many years ago from the *Medical Register*. The law claimed his whole energies and gave his peculiar gifts their natural scope. For nearly half a century—from 1867 until his appointment as Lord Chancellor in 1916—he practised with great and deserved success at the Bar, and for ten years was a Law Officer of the Crown. In 1920 he was appointed the British member of the Permanent Court of Arbitration at The Hague, and in the following year a member of the International Court of Justice set up by the League of Nations Assembly. As Member of Parliament from 1910 to 1916 for the Universities of Edinburgh and St. Andrews, Sir Robert Finlay represented a constituency largely medical, and thus for a time regained touch in some measure with the profession to which he had first belonged. He would have attained high rank in any calling, but it is probable that the law gained more than medicine lost when, as a young medical graduate, Finlay came from Edinburgh to London to read for the Bar.

INFLUENZA.

IN the week ending March 2nd the death roll of influenza in the great towns of England and Wales again lengthened, from 1,764 to 2,183. These last two weeks have seen the largest returns since the pandemic years 1918–19, for the total in the worst week of the 1922 recrudescence was only 1,450. The notifications of primary pneumonia increased from 4,451 to 5,874, also a "record" figure. The local distribution of mortality and morbidity suggests that the epidemic was subsiding in Lancashire and in London, but still increasing in the Midlands, Yorkshire, and the North. In London and Lancashire the epidemic has developed synchronously. In both areas the maximum of notifications of pneumonia was in the week ending February 9th, and of deaths from influenza a fortnight later. In Yorkshire and the Midlands the notification rate of pneumonia did not begin to rise unmistakably until the London and Lancastrian maxima were passed, and in both areas the ratio of notifications to gross population is already larger than in the worst week of London. Birmingham was conspicuously affected in the week ending March 2nd, when deaths from influenza increased from 80 to 229. Clinical reports still speak of the mildness of type, and the age distribution of the deaths ascribed to influenza continues to select the aged.

PHYSICAL EXAMINATION FOR MOTOR DRIVERS.

FOLLOWING upon a resolution moved by Dr. Stella Churchill in the London County Council, the Public Control Committee of that authority has been considering whether all holders of motor drivers' licences should be required to undergo a physical examination. Under the existing law the county council, as licensing authority, has no power to refuse to grant a licence to drive a motor car unless the applicant is under the age of 17 years (14 years in the case of a motor cycle) or is disqualified from obtaining a licence. The committee has ascertained the practice in other countries, which appears to be widely divergent; in some countries a driving test is imposed, in others medical certificates have to be obtained, whilst in at least two countries both a medical examination and a driving test have to be passed. It has not been possible to obtain particulars as to the number of accidents attributable to the physical unfitness of the driver. Four of the eight London coroners have stated that there is no record during the past three years of any case of fatal accident in their districts being due to some physical defect of the driver which could have been ascertained by the making of a physical examination when he applied for a licence, and in no case do any of the London coroners state that a fatal accident resulted from the driver's physical disability, although this inference might be drawn in one or two cases.

In the view of the London County Council committee, the question at issue is a national one; it is at present being dealt with from that standpoint both by the Royal Commission on Transport, which has heard evidence as to the necessity or otherwise of instituting a physical test for applicants for licences, and in the Road Vehicles Regulation Bill, introduced into the House of Lords by Lord Cecil, and now under consideration by the Select Committee, which would require a person to satisfy the licensing authority that he was physically fit and competent. In these circumstances the Public Control Committee has, with some reason, decided to take no action. If there is need for a changed practice it should be met by a uniform policy applicable to the whole country.

EMIL VON BEHRING.

ONE of the greatest benefactors of humanity, Emil von Behring, the seventy-fifth anniversary of whose birth is being celebrated in Germany this week, was born at Hannsdorf, near Deutsch-Eylau, West Prussia, on March 15th, 1854, the son of a schoolmaster, who was father of eleven other children. He started his professional career at the age of 26 as an army surgeon, and two years later, in 1882, published his first scientific work on the action of iodoform as an antiseptic. In 1888 he left the army, and the following year became Koch's assistant at the Hygienic Institute of Berlin, where two years later, in collaboration with Kitasato, he discovered tetanus antitoxin, and published his first article on diphtheria and tetanus antitoxin, for which he was awarded the prize of 50,000 francs by the Institut de France, and of 25,000 francs by the Académie de Médecine. At Christmas, 1891, he made the first trials of diphtheria antitoxin in von Bergmann's and Heubner's clinics at Berlin. In 1894 he was appointed professor of hygiene and bacteriology at Halle, and in 1895 occupied the corresponding chair at Marburg. Orders and distinctions in the following years were showered upon him by the learned societies of all European countries. In 1901 von Behring was made the first recipient of the Nobel Prize, in acknowledgement of his discovery of diphtheria antitoxin, and received the title of nobility. During the next four years he conducted experimental studies in connexion with the prevention of bovine tuberculosis, and in 1905 turned his attention to the collection of milk by aseptic methods and its preservation by formalin and hydrogen peroxide. Besides numerous shorter articles on the experimental therapeutics of anthrax and streptococcal infection, the hygiene of milk supply and water, and other subjects, von Behring was the author of books on blood serum therapy (1892), the etiological treatment of infectious diseases (1893), the history of diphtheria (1893), the control of diphtheria (1894), and the general treatment of infectious diseases (1898).

SIR E. FARQUHAR BUZZARD will deliver an address to the North Western Tuberculosis Society, in the Anatomy Theatre of the Medical School, Oxford Road, Manchester, on Thursday, March 21st, at 3.15 p.m., on tuberculosis and the nervous system. The meeting will be open, and the attendance of medical practitioners is cordially invited.

AT the next meeting of the Society for the Study of Inebriety on Tuesday, April 9th, at 4 o'clock, at 11, Chandos Street, Cavendish Square, W., Dr. J. D. Rolleston will open a discussion on "Alcohol in therapeutics."

THE British Association for the Advancement of Science, at the invitation of the Court of Common Council, will hold its centenary meeting in 1931 in London.

South Africa.

Passing of the Natal Medical Council.

AT the final meeting of the Natal Medical Council on December 14th, 1928, the president, Dr. D. Campbell-Watt, delivered a valedictory address, which is published in the issue of the *Journal of the Medical Association of South Africa* for January 12th. The president reminded his hearers that, in 1856, the Natal Medical Committee was formed; it was replaced later by the Natal Medical Board, which continued until the coming into operation of the Medical and Pharmacy Act of 1896, and the creation of the Natal Medical Council. This, like other provincial councils, was now being superseded by the Union Medical Council under the consolidating Medical and Pharmacy Act of 1928. The membership of the Natal Medical Council had always consisted of seven medical practitioners and one dentist; three of the seven, together with the dentist, were nominees of the Government, while the remaining four medical members were elected by the registered medical practitioners of Natal, forming one constituency. Of the original members of the first council only Dr. Archibald McKenzie and Dr. Campbell-Watt had had an unbroken record of thirty-two years' service on this body. One feature of the early days was the presence of the principal medical officer, which appointment was a survival of the old Medical Board; in 1909 the last of these officers left the council. The first president of the council had been Colonel James Hyslop, who had held the office for twenty-one years, during which Dr. Campbell-Watt was secretary; after Colonel Hyslop's death, in 1917, Dr. Campbell-Watt succeeded to the post of president, and the present secretary, Dr. Russell-Strapp, began his service in that capacity. Commenting on various aspects of the history of the Natal Medical Council, Dr. Campbell-Watt remarked that it was curious how the proverbial coach-and-four had been driven through the penal sections against unqualified practice, Natal having thus been a happy hunting-ground for the quack. Another curiosity was to be found in the amending Act of 1919, which permitted the South African student to proceed to any first-class medical or dental school in the world, and thereafter claim registration in South Africa on presentation of his diploma, irrespective of the fact that reciprocity of this kind was very rare. During the life of the Natal Medical Society it had given effect to the registration of 589 medical practitioners, 149 dentists, 655 trained nurses, 29 mental nurses, and 396 midwives. While registration was compulsory for medical practitioners and dentists, it was still only voluntary for nurses and midwives. The president remarked that, though delegates from the Natal Medical Council had co-operated with others in forming a consolidating Medical and Pharmacy Bill for the Union of South Africa in 1910, the fruits of this work had only just appeared; it had thus taken eighteen years to place a measure of this kind on the statute-book. In his final utterance as president, Dr. Campbell-Watt recalled the happy friendships which had made it easier for the Natal Medical Council to act up to the highest traditions of the medical profession, and expressed his conviction that the new Union Medical Council, as the supreme authority on medical ethics, would have a salutary and profound influence on the national welfare. The Natal Medical Council had fulfilled its destiny in the medical history of South Africa, and its successor would continue the work and traditions with a higher status, a wider horizon, and more extensive responsibilities.

Post-graduate Course, Capetown.

Under the auspices of the Cape Western Branch of the Medical Association of South Africa (British Medical Association), in co-operation with the medical faculty of the University of Capetown and the members of the staff of the New Somerset Hospital, a post-graduate course was held during January. The syllabus was arranged for the mornings only, but additional afternoon functions included a visit to the City Hospital for Infectious Diseases and to the Corporation Sewage Disposal Works at Athlone. On

January 11th an evening was spent at the new medical school buildings at Groote Schuur, which were thrown open for inspection. Clinical demonstrations in the departments of bacteriology, pathology, and chemical pathology were conducted by members of the university staff. On January 18th the course was brought to a conclusion by a meeting of the Cape Western Branch of the Medical Association of South Africa (British Medical Association), when a paper on the value of post-graduate instruction was read by Mr. E. Barnard Fuller. In the discussion that followed members who had attended the course expressed their appreciation of the facilities provided, and at the same time criticized certain features of the syllabus. The committee responsible for arranging the course regarded it as experimental to some extent, but there is little doubt that it was much appreciated by those who attended it, and that it served a definite purpose. It will almost certainly be repeated next year.

Hospital Policy in the Cape Peninsula.

At the beginning of 1927 the six hospitals controlled by the Cape Hospital Board—namely, Somerset Hospital, Woodstock Hospital, Rondebosch and Mowbray Cottage Hospital, Victoria Hospital (Wynberg), Simonstown-Kalk Bay Hospital, and the Peninsula Maternity Hospital—together accommodated 478 patients. The number of beds has since been increased to 536, and will shortly be further increased to 540. The daily units recorded at the six hospitals during 1927 were 161,394, compared with 174,024 during 1928, and the number of in-patients treated increased in the same period from 7,989 to 8,855. The total number of out-patients, which in 1927 was 116,943, rose in 1928 to 143,017. Similar increases are recorded in the board's two convalescent homes, where the number of persons dealt with rose from 642 to 714. In a comprehensive statement on the problem of augmenting the at present inadequate hospital accommodation, the board has outlined schemes for a new hospital on the Groote Schuur estate, the rebuilding of the Peninsula Maternity Hospital, an extension of the Woodstock Hospital and of the Victoria Hospital, Wynberg, and the conversion of a building at the Eaton Convalescent Home into a dormitory for non-European inmates. A considerable addition to the Capetown Free Dispensary has been made possible by a bequest from the estate of the late Mr. Hiddingh. The position in regard to the district nursing service is interesting; in 1926 there were nine district nurses operating throughout the Cape peninsula; there are now twenty-two, and provision is being made for a further extension during 1929. A sister tutor has been appointed to the new Somerset Hospital, and the board will recommend the appointment of additional sisters to teach the probationers of the hospitals at Woodstock, Rondebosch, and Wynberg.

Medical Training for Natives.

At the European-Bantu Conference held in Capetown in February resolutions were passed urging the Government to adopt the recommendation of the Hospital Survey Committee of 1927 as the basis of a hospital programme for the needs of non-Europeans. This would involve the immediate provision of one bed for every 1,400 of the non-European population, the ratio within ten years to become 1 in 700. The need was impressed upon public health authorities for the establishment of easily accessible out-patient clinics for natives, and for the provision of an adequate ambulance service. The conference supported the recommendations of the Loram Committee that facilities be provided for the full medical training of non-Europeans in university courses, carrying the same entrance requirements and registrable qualifications as those applicable to Europeans. To defray the cost of training it was suggested that loans be made available for the assistance of deserving native medical students, and that pending the establishment of adequate facilities in South Africa a system of bursaries and loans be instituted to enable students to proceed overseas. Similar recommendations were made in relation to the training of non-European probationers in general nursing and in midwifery, and it was proposed that there should be a difference between the salaries of the registered nurse and of the unregistered. Chiefs, district councils, hospital boards, and municipalities were urged to provide careers and adequate remuneration for non-European nurses and health assistants. The conference welcomed the interest shown by the South African Council for Child Welfare in work among the non-Europeans, and recommended joint councils and other bodies to assist in the formation of welfare societies concerned with non-European children, and in the organization of health propaganda and instruction.

India.

Work of Indian Medical Schools.

IN spite of financial handicaps progress is being made in developing the educational facilities at King Edward VII Memorial Hospital and the associated Seth Gordhandas Sunderdas Medical College in Bombay, which came into existence in 1925. In the annual report for the year 1927–28 it is stated that there were 50 fresh admissions to the College, bringing the total number of students at the end of the year to 139, of whom 6 were women students. For the Intermediate M.B., B.S. examination 57 candidates were presented at various times, of whom 28 passed. The first class of students admitted to the College appeared for Part I of the Final M.B., B.S. examination last September, and those who were successful will have qualified to take the second part at the end of the current year. Since the institution of the College considerable advance has been made in developing the various museums and in the equipment of the special departments, but it is regrettable to note that insufficiency of the resources available has prevented the anticipated expansion of research work. In one case certain investigations have had to be suspended. This side of the work of the College suffers also from the heavy demands made by the exigencies of teaching upon the time of the staff. At King George's Medical College, Lucknow, according to the report for 1927 of the inspector-general of civil hospitals for the United Provinces, there were 258 students at the end of the year, as against 243 the previous year. In the various examinations constituting Part I of the Final M.B., B.S. the number of students who appeared was 59, and the number of those successful was 34; in Part II the number appearing was 73, and the number of passes was again 34; in Part II of the First M.B., B.S. examination 36 candidates passed out of 56 who presented themselves. There was a decrease of 20, at 305, in the number of students under instruction at the medical school for men at Agra, and only 51 students passed the final examination as compared with 80 in 1926. The numbers of students on the roll at the women's school, 63, and the number of passes in the final examination, 7, were in each case one less than in the previous year. Such figures have something more than an academic interest, for they indicate the efforts being made to secure a high standard of medical training in India.

Financial Assistance for the Pasteur Institute.

The steady increase in the demands made on the Pasteur Institute at Kasauli has resulted in financial embarrassment, which is very gravely hindering its work. The popularity of antirabic treatment is now nearly three times what it was in 1910, and nearly twenty times that of 1901, when the Institute was opened. During 1926 more than 6,000 patients were dealt with, and over 2,000 others went to the local centres at Lahore, Rawalpindi, and Allahabad, where vaccine is supplied by the Pasteur Institute. It has proved impossible to secure the necessary additional residential hospital accommodation, to keep the buildings in proper repair, and to provide up-to-date apparatus and equipment. An appeal for an increased grant was made in 1927 to the Government of India, which has now decided to accede to this request on the understanding that the additional liabilities so incurred shall be limited. The Government of the United Provinces has undertaken to contribute an additional sum of 10,000 rupees annually, and the Government of the Punjab has also agreed to make a non-recurring grant of 50,000 rupees during the year 1929–30, these donations being subject in both cases to the approval

of the legislative councils. A few Indian States have also promised to increase their contributions, but it is not thought that the amount available from this source will be large. It is generally realized that, should the Institute be compelled to close its doors for want of funds, the Government of India and other bodies benefiting at present by the services it renders would have to make separate provision for the antirabic treatment of patients from departments and areas directly administered by them, and also be obliged to undertake research.

Medical Service in Northern India in the Eighties.

Under the title of "Echoes of the past," Lieut.-Colonel G. H. Younge, R.A.M.C.(ret.), has contributed to the *Journal of the Royal Army Medical Corps* for January a description of a five-year tour of duty in the Bengal Presidency between forty and fifty years ago. Such a record must be of interest alike to the young officer who has just entered the service, to the older man who has done ten or twenty years' service, and has himself been through a somewhat similar tour of duty; most interesting of all to the contemporary who can look back on somewhat similar experiences of his own, nearly half a century ago. Much has changed during this period, and nowhere has change been more marked than in India. But to the man who went to India in the seventies or early eighties, Colonel Younge's account recalls memories long past and gone. *Forsan et haec olim meminisse juvabit.* Except for one unique experience, Colonel Younge's tour of service comprised the usual routine of duty, leave, sport, etc., which all young medical officers went through, and most of them probably enjoyed—ordinary hospital duty, cholera duty and cholera camps, marching in relief, travelling in charge of detachments, an artillery field firing camp, leave in the hills, at Masuri, and a six months' tour of hill duty, at Dalhousie. The author was stationed for considerable periods at Benares, Cawnpore, and Mecan Meer, and had the advantage, when moving in charge of detachments, of visiting many other places of interest—Calcutta, Lahore, Tiruzpur, Darjeeling. Of the great show places of Northern India, Cawnpore is the only one described, Agra and Delhi are not mentioned. His tour of duty, of course, began with the voyage to the East. And that voyage was an experience of a time long passed away, for he went out, as practically all officers then did, on one of the five famous old Indian transports, which were vessels of the Royal Navy, their ships' complements being all naval officers and men. He went out in the *Jumna*, and returned home in the *Serapis*, the latter the vessel in which King Edward VII, when Prince of Wales, made his journey to India. These transports disappeared from the Navy List some thirty years ago. Nowadays all trooping is done in hired transports of the mercantile marine, though for some years certain of the vessels of the Royal Indian Marine were used in this capacity. An interesting but unpleasant experience, which can have fallen to the lot of very few, was that of being present at the public execution of a British soldier. The criminal had "run amok," and had murdered several comrades. He was sentenced to be publicly hanged on the parade ground at Cawnpore, before the garrison of that station, and also in the presence of several other regiments which were halted there for the purpose, while on the march. This, we believe, was the last occasion on which such a public execution of a British soldier took place in India. It was the foundation of Kipling's poem of "Danny Deevor." One of Colonel Younge's earliest duties was to go to Darjeeling in charge of a batch of invalids. The author states, "I longed to see Kinchinjunga, the highest peak of Mount Everest, but unfortunately during the whole of my stay it was hidden in a thick mist." During the rainy season, Kinchinjunga is often invisible from Darjeeling for days together, owing to mist. The view of the great ice and snow mass of Kinchinjunga, with its attendant smaller peaks, Pandine, etc., forty-seven miles only from Darjeeling, across a deep valley, must be one of the most magnificent views in the world. But Kinchinjunga (28,156 feet), splendid as its massive bulk is, has nothing to do with Everest (29,002 feet), a much higher and larger mountain, far to the west of Kinchinjunga, and not visible from Darjeeling.

Scotland.

Health of Scotland.

THE return of the Registrar-General for Scotland for the quarter ending December 31st, 1928, together with the supplementary return for that year, has just been published. The birth rate of the year was 19.8 per 1,000, and the marriage rate 6.7 per 1,000, both identical with the figures for 1927. The death rate was 13.3, as against 13.5 in 1927. This is the fourth successive year in which the death rate has been between 13 and 14 per 1,000. The birth rate, along with that of 1927, is the lowest yet recorded, the previous lowest being that of 1917, which was 20.3, as compared with the maximum Scottish birth rate, which occurred in the year 1876, and was 35.6 per 1,000, or 44 per cent. higher than it is now. The infant mortality of the year shows a decrease of 3, having fallen from 89 per 1,000 registered births to 86. The death rates from tuberculosis show reduction, that from all tuberculous disease having fallen from 100 per 100,000 to 97, and that of tuberculosis of the respiratory system having fallen from 71 per 100,000 to 68. Both of these rates are the lowest Scottish rates as yet recorded. Deaths from malignant disease numbered 6,902, a number which differs by only 17 from that of the previous year. The death rate for the fourth quarter of the year was 12.9 per 1,000, which is 0.8 less than that of the fourth quarter of 1927. With regard to the causes of death, of the 15,851 deaths registered in the quarter, 484, or 3.1 per cent., were attributable to the principal epidemic diseases, including 3 from enteric fever, 18 from measles, 37 from scarlet fever, 115 from whooping-cough, 119 from diphtheria, and 192 from diarrhoeal diseases among children less than 2 years old. In the counties, including burghs, the principal epidemic disease death rate ranged from 1.0 in Shetland to 0 in Berwick, Nairn, Orkney, and Peebles. In the larger burghs this death rate ranged from 0.8 in Hamilton, 0.5 in Glasgow, Motherwell, and Kilmarnock, to 0.2 in Edinburgh, Dunfermline, and Kirkcaldy, and 0.1 in Perth. Deaths from epidemic diseases other than those grouped as the principal epidemic diseases included 32 from cerebro-spinal meningitis, 32 from encephalitis lethargica, 41 from erysipelas, and 15 from acute poliomyelitis. Deaths from influenza during the quarter numbered 255, which constituted a death rate of 21 per 100,000. Deaths from malignant disease numbered 1,758 during the quarter, and constituted 11.1 per cent. of the total deaths. These numbered 76 fewer than in the fourth quarter of the previous year. Deaths from pneumonia, exclusive of influenza, numbered 1,458, equalling 9.2 per cent. of the total deaths of the quarter, but being 245 fewer than in the fourth quarter of the previous year.

Dinner to Sir James Leishman.

A complimentary dinner to Sir James Leishman on his retirement from the chairmanship of the Scottish Board of Health was held in Edinburgh on March 8th. Lord Provost Sir Alexander Stevenson presided, and the dinner was attended by about 160 persons, of whom the majority were associated with the work of the Department of Health for Scotland. Lord Alness proposed the health of the guest, and referred to the invaluable work which had been done by Sir James Leishman in connexion with the National Health Insurance Act and the Board of Health for Scotland. In his reply, Sir James Leishman said that it was a disturbing fact that the population of Scotland had remained practically stationary in recent years. He regarded with some perturbation the fact that the best of the population were leaving Scotland for the colonies and America. The cost of the social services of Scotland at the present time practically touched £1,000,000 per week, an amazing figure undreamt of by the older type of economist and statesman, and one calculated to give pause even to progressive men of all parties with reference to the capacity of the country to bear burdens. The annual health insurance income in Scotland amounted to about £4,000,000 from all sources, and up to three years ago the expenditure had been a good deal less. Although they

had built in Scotland some 89,000 State-aided and rate-aided houses, and were building 15,000 more, one of the real problems in the country still was bad housing, not only in the large cities, but in mining, agricultural, and highland areas. He thought that the Insurance Act had been a notable experiment in providing general practitioner treatment for the workers of the country, upon whom it had conferred a substantial benefit. The weakest part had been certification of sickness, but he would say no more on that point. One of the future problems was to bring together the municipalities and the voluntary hospitals in a good working arrangement.

Edinburgh Post-graduate Courses in Medicine.

The syllabus of post-graduate courses organized by a joint committee of the School of Medicine of the Royal Colleges and of the University of Edinburgh has just appeared. Since the first organization of post-graduate teaching in the Edinburgh Medical School in 1905, the courses which are offered to graduates have shown a great development both in number and in variety. A new feature of these courses consists in a course on clinical medicine, which will be given daily from 11 to 12 during the month of May by members of the medical staff of the Royal Infirmary, the fee being 3 guineas, while a course of instruction in medical side-room technique will be arranged if there are sufficient applicants. A similar course on clinical surgery will also be held from 11 to 12 for a period of six weeks by the members of the surgical staff of the Royal Infirmary, the fee being 3 guineas. During the summer vacation a four weeks' course in obstetrics, gynaecology, and diseases of children will be held from July 15th to August 10th, and will comprise clinical midwifery and gynaecology, obstetrical and gynaecological anatomy, physiology, and pathology, as well as child welfare and ante-natal clinics. The minimum number for which the course will be held is 12, the fee being 10 guineas. On its conclusion a four weeks' general practitioners' course will be held from August 11th to September 7th. This will include applied anatomy, clinical medicine, clinical surgery, clinics upon infectious diseases, gynaecology, diseases of children, diseases of the eye, diseases of the ear, nose, and throat, and dermatology. In addition, demonstrations will be given upon bacteriological diagnosis, morbid anatomy, insulin therapy, tuberculosis, radiology, ultra-violet ray therapy, dental treatment, and venereal diseases, in the afternoons. The fee is 10 guineas for four weeks, or 6 guineas for two weeks. Concurrently with the last, and at similar fees, a general surgical course will be held. This will include applied anatomy, general surgery, surgical operations, and clinics at the Royal Infirmary and the Royal Hospital for Sick Children, surgical pathology and physiology, venereal clinics, and radiology. The special departments of surgical diagnosis in renal disease, abdominal surgery, and gynaecological operations will also be dealt with. During the period of these courses special classes on vaccine therapy, medical chemistry, diseases of the blood, and radiology can be taken by those desiring to do so at a special fee. At other times of the year, during the academic terms, post-graduate classes can be attended dealing with tuberculosis, diseases of the nose, ear, and throat, ophthalmoscopy, venereal diseases, and surgical pathology. Various university classes, suitable for graduates, include medical entomology, diseases of tropical climates, psychology, bacteriology, neurology, chemical physiology, and applied anatomy. These are chiefly parts of courses of instruction for various university diplomas, but may be taken separately by any graduates interested in the subjects.

Glasgow Maternity Hospital.

At the annual meeting of the contributors to the Glasgow Royal Maternity and Women's Hospital, Sir John MacLeod, honorary treasurer to the institution, referred to the deficit on the year's working amounting to £4,000 on the ordinary accounts, which was £270 greater than the deficit of last year. This necessitated an encroachment on capital which could not go on indefinitely, as it would ultimately exhaust the capital fund. It was in the interest of the community at large that such an institution should receive greater public support, which he hoped would be forthcoming. Dr. Macfarlane said that the value of the social service which this hospital rendered to Glasgow was not fully understood by the entire community, which ought to take a greater interest in it. The Lord Provost said he considered that the Glasgow Maternity Hospital had a particular grievance in the fact that it was not treated by the Scottish authorities in the way that similar institutions were treated, and he thought that the Scottish Office might do more in answer to the representations which were made on behalf of the hospital.

Glasgow Eye Infirmary.

The annual meeting of the Glasgow Eye Infirmary was held on February 25th. Lord Provost Sir David Mason presided, and referred to the fact that this was one of the oldest philanthropic institutions in Glasgow, having been in existence for 105 years. It was interesting to note that in 1824 there had been 209 patients, that the 1,000 mark had been passed in 1851, and the 10,000 mark in 1883, the 20,000 in 1902, and the 30,000 mark in 1927. During the past year the number of out-patients had been 32,053, and the total attendances 72,562. The patients came not only from Glasgow and Scotland, but from various parts of England, as well as from the United States, the Transvaal, and British Guiana. The expenditure had exceeded the ordinary income, although there had been a gratifying increase in employees' subscriptions amounting to £192. He thought that it was scarcely fair to expect the citizens of Glasgow to bear the whole burden of the upkeep, and some scheme might be devised to appeal to likely sources beyond the limits of the city.

Glasgow Students and the Hospitals.

The special effort made by Glasgow students in January last on behalf of local hospital charities succeeded in raising the sum of £17,000. A meeting of the committee appointed by the Students' Representative Council for the purpose of allocating this sum was held on March 1st, and the following distribution was made. The Royal, Western, and Victoria Infirmaries, and the Royal Hospital for Sick Children and Maternity Hospital are each to receive £1,500 for the endowment of beds, while for ordinary purposes the Royal Infirmary is to receive £570, the Western Infirmary £425, the Victoria Infirmary £285, the Maternity Hospital £335, the Samaritan Hospital £300, the Ear, Nose and Throat Hospital £300, the Eye Infirmary £300, the Cancer Hospital £300, the Dental Hospital £500, the Elder Cottage Hospital and Lock Hospital £150, the Glasgow District Nursing Association, Ophthalmic Institution, and East Park Home £100 each. A grant was also made to the National Miners' Relief Fund of £2,975, and to the Lord Provost's Fund of £1,650.

Ayr County Hospital.

The report on the work of the Ayr County Hospital in 1928 presented at the annual meeting on February 25th showed that the number of patients treated in the wards during the year had been 1,773, of whom 1,467 were surgical and 306 medical. The ordinary income for the year had been £10,035, an increase of £835, while the total ordinary expenditure was £12,951. The total income from all sources had been £16,503, and the total expenditure £13,048, the credit balance being carried to maintenance reserve fund. The chairman, Colonel Houldsworth, thought that the financial position was satisfactory, because few of the voluntary hospitals in the country had been able in the post-war years to balance ordinary income with ordinary expenditure, and in this respect the county hospital had merely shared the common experience. Reference was made to the alarming number of cases arising from motor accidents, and the chairman said that many of those injured resided outside the hospital district and made no contribution whatever for their treatment and maintenance in the hospital. He hoped that by some system of insurance, which would be compulsory upon the owners of motor cars, a solution would be found for this difficulty, as had been recommended by the Hospitals Association.

England and Wales.

Medical Society of London.

THE anniversary dinner of the Medical Society of London was held at the Trocadero on March 8th, with the president, Dr. John Walter Carr, in the chair. The toast of the society was proposed by Mr. Justice McCardie, who expressed appreciation of the good cheer always provided by doctors when they dined together, and of the habitual cheerfulness of doctors in the course of their daily work. The gathering that evening represented, he said, the things that united, rather than those that divided, the members of a calling. Sir Henry McCardie ended with a tribute to the great traditions of the medical profession and of this venerable society, now in its 157th year. The president, in his reply, drew an ingenious parallel between the Royal Society of Medicine and the Medical Society of London on the one hand, and the United States of America and Great Britain on the other. He then spoke of the opening up of the library and its development under the honorary librarian, Dr. A. F. Voelcker, and the registrar and secretary, Mr. Carter, and of the recent purchase, on advantageous terms, of the freehold of 11, Chandos Street. In the capable hands of Dr. Feiling and Mr. Davies-Colley, the honorary secretaries, the society was holding its own in all directions and "bringing forth fruit in old age." The health of the visitors was proposed by Mr. V. Warren Low, who recalled that Lettsom, their founder, delighted in hospitality, and that the society had done so ever since. Among the medical guests whom he welcomed with sparkling phrases were Sir John Rose Bradford, President of the Royal College of Physicians; Surgeon Vice-Admiral A. Gaskell, Medical Director-General, R.N.; Sir Ewen Maclean, President, and Dr. H. B. Brackenbury, Chairman of Council, of the British Medical Association; Colonel Samman, Master of the Apothecaries Society; the presidents of a number of sister societies; and the Editors of the *Lancet* and the *British Medical Journal*. Lord Riddell, in reply to the toast, declared his admiration for the medical profession and for the many-sidedness of so many of its members; he wondered what it was that made them speak so well, and what he himself had done to deserve the shafts of Mr. Warren Low's wit. Sir Ewen Maclean, who also responded, said that the Medical Society of London had amply justified its splendid detachment from the great amalgamation of 1907. Such medical bodies rightly left professional politics to the British Medical Association, which in the revolution of 1912 played its necessary part, and was now watching on behalf of the profession the new Local Government Bill. He asked for real and earnest help from individual members of the society in the shaping of this great measure along wise lines.

Cardiff Medical Students' Club: London Branch.

The London Branch of the Cardiff Medical Students' Club was inaugurated at a dinner on St. David's Day at Frascati's Restaurant, under the presidency of Dr. Dan Davies; some fifty former students of the Cardiff Medical School who are continuing their studies at various London hospitals owing to the closure to them of the Cardiff Royal Infirmary were present. The chairman, proposing the toast of "Dewi Sant," said that the study of the early history of the University of Wales, its struggles, and its successes, could not fail to deepen the patriotism of young Welshmen. Unlike other universities, which had owed much to benefactions from the rich, the University of Wales had been built up largely on the contributions of the peasantry. He felt sure that the breaking up of the federal University of Wales would be a retrograde step. Professor E. H. Kettle, who proposed the toast of "The Welsh National School of Medicine," expressed his firm faith in the future of the school, but feared that the ideals which had inspired those who had worked for the development of a great national institution had been replaced of late by pettiness of vision and selfish considerations. He hoped that the eclipse of the school would be only temporary, but its future recovery would need financial assistance from the Government; this was unlikely to be forthcoming unless there were substantial guarantees that the deplorable situation of last year would not recur. Mr. W. D. Lovelock-Jones, who seconded, expressed the sincere hope that Welsh nationalism would demand the resurrection of the school. Professor A. W. Sheen, in reply to the toast, said that negotiations were still in progress; he held out some hope that by next October the school might be re-established. Professor A. M. Kennedy also responded, and, though less optimistic, voiced his appreciation of the loyalty of the students in Cardiff to the professors. The toast of "The Cardiff Medical Students' Club" was proposed by Mr. J. P. G. Howells, and was seconded by Miss M. E. H. Jones. Professor T. Graham Brown, the president of the club, replied, and conveyed greetings from the junior students working in Cardiff. The health of "The Professors" was proposed by Mr. E. Llewellyn Williams and Mr. D. C. Harris, Professor E. C. Collis responding. Sir Ewen Maclean, who proposed the health of "The Guests," commented on the severity of the requirements of the University of London. The final toast of "The Chairman" was proposed by Mr. Lambert Rogers, and was accorded musical honours.

Leicester Medical Service.

The annual meeting of the Leicester Public Medical Service was held on March 5th, when the report of the board of management for the year 1928 was presented. It was stated that the continued depression in industry had had an adverse effect on the receipts, and the importance of increasing the number of subscribers was emphasized. The work in the various special departments for treatment had been continued, and the facilities thus provided had been welcomed by a large number of subscribers. Accommodation had been provided by arrangement with the Ministry of Health for the regional medical officer and the regional dental officer, as well as for the dental treatment of expectant mothers. A benefit fund established and maintained by donations from the trustees of the late Miss Sarah Barlow and the medical profession in Leicester, to enable uninsured people in straitened circumstances to purchase insulin at a greatly reduced cost, had proved very helpful in an increasing number of cases. The annual meeting of the Leicester subdivision of the Union of Medical Practitioners was held on the same day at the Central Dispensary. It was reported that the scheme for collective locumtenencies during holidays and sickness had proved of considerable value to the members. Donations to medical and allied charities, amounting to £113, were authorized by the committee during the year.

Gifts of Radium to the London Hospital.

Lord Knutsford informed the quarterly Court of Governors of the London Hospital on March 6th that two gifts, each of a gram of radium which cost £12,000, had been made to the hospital by two donors who insisted upon remaining anonymous. In addition, one of these had given £13,000 to be used as an endowment for a radium laboratory in which radium emanations could be collected in platinum containers for distribution. It was a condition of the gift that, if there was any excess of these emanations over that required for hospital cases, it should be available for members of the surgical staff for private patients, and also for treating cases of cancer in other hospitals. Assistants to work in the new laboratory were being trained by Professor Russ, head of the radium department at the Middlesex Hospital. Lord Knutsford explained that previously to receiving these gifts they had been endeavouring to treat nearly 1,000 cases of cancer a year, though they only had enough radium to deal with about 150. An additional endowment for the radium laboratory had been received from the East End Tradesmen's Association, and amounted to £1,800. Lord Knutsford expressed regret that the quinquennial appeal for £200,000 had only realized £118,337. It would soon be necessary to consider the question of enlarging the *x*-ray department, in which last year 25,000 radiographs had been taken.

Correspondence.

THE INTRACUTANEOUS TUBERCULIN TEST.

SIR,—I hope you will allow me space to reply to some of the points raised by Dr. Warwick Preston and Dr. Camac Wilkinson in your issue of March 9th (p. 475) in regard to my paper on intradermal tuberculin tests published in the *Journal* of February 23rd at page 336.

I am glad to be able to inform Dr. Camac Wilkinson that the tuberculin produced by Messrs. Burroughs Wellcome and Co. is quite as reliable as that of Meister Lucius and Bruning. This I have proved by carrying out simultaneous tests on the same persons with serial dilutions of both preparations, and finding the resulting reactions quite comparable up to the highest dilutions used. I elected to employ "old tuberculin" for the tests, because I had satisfied myself by long experience that it is one of the most reliable forms of tuberculin, and because it was important to work on lines comparable to those of another and far larger investigation now in progress in South Africa in order that the one series of observations might supplement the other. Further, it is to be noted that old tuberculin is the only tuberculin preparation recognized in this country for standardization under the Therapeutic Substances Act.

I need not remind Dr. Camac Wilkinson that the standardization of tuberculins, even when carried out on the most approved lines, still leaves much to be desired. It is difficult or impossible to make sure that one batch is of exactly the same strength as the next. The margin of error has been greatly reduced in recent times, but it has not yet been eliminated. For this reason it was necessary, in our investigation in Wales, to use the same batch of tuberculin throughout. This was rendered possible by the kindness of Dr. R. A. O'Brien, who was good enough to put aside a supply of batch No. 1154 for our special use.

On the question of a possible fallacy due to the presence of glycerin and toxic albumoses in the old tuberculin employed I am in a position to reassure Dr. Warwick Preston. Parallel tests were carried out, at the same time and on the same patients, with dilutions of a pure tuberculin protein free from glycerin and peptone, prepared by my colleague Dr. W. H. Tytler, and the results were strikingly similar. Again, Dr. Preston's fear that perhaps mere redness was taken as a "positive" is without foundation. A raised plaque of oedema, usually surrounded by a blush and sometimes showing a small bluish central area with a tendency to vesication—the "cocarde" of Mantoux—is the most typical reaction, but the essential is the raised and palpable plaque which must be sufficiently definite to be measured with the millimetre scale. My readings were carried out on the third day, the time of maximum reaction.

Reverting to Dr. Camac Wilkinson's remarks, the tests were not in any sense "casual observations made by a few juniors." Those on the healthy group, and some of those on the sick, were carried out by me personally. The rest were performed by members of the medical staff of the Welsh National Memorial Association, all of whom were whole-time tuberculosis experts possessing long experience of tuberculin, both in treatment and in diagnosis. Dr. Camac Wilkinson seems to think that it was a reproach to these investigators that the dilutions of tuberculin were made up by me and not left to them. I can assure him that all of them are quite familiar with the dilution of tuberculin for routine work: but, for an investigation on standard lines, standard methods are necessary, and slight personal idiosyncrasies are avoided by supplying the dilutions from a laboratory where the same technique is always employed. Again, it may be true, as Dr. Wilkinson thinks, that well-made dilutions of tuberculin keep indefinitely; but why chance it? We know that they keep without appreciable deterioration for three weeks or a month, and it is surely better to work on uniform lines within the limits of certainty.

Neither of your correspondents seems to have realized that my object was to compare the effects of varying strengths of *the same* tuberculin, not the effects of varying types of tuberculin in the same concentration. It is not surprising that there should be discrepancies between my results, obtained with a dilution of 1 in 1,000 of Burroughs Wellcome and Co.'s old tuberculin, read at three days, and those of Dr. Preston with 1 in 1,000 of T.A.F. of Meister Lucius and Co., read at the end of a week. What is more interesting is that Dr. Preston's findings confirm mine to the effect that his highest percentage of "positives" was in the non-pulmonary, and his lowest in the more severe pulmonary cases. He does not specify the exact composition of his "clinically free from tuberculosis" group. Mine consisted of healthy male adults residing in London. I have no doubt that a group of healthy persons could be found in which only 15 per cent. reacted, and there is no difficulty in finding such a group at any time amongst young children. I may say, however, that I have since tested another batch of adult non-tuberculous males, obtaining a slightly higher percentage of positives than that recorded in my paper. This finding is, in my opinion, the most important result so far gained from our Welsh investigation.

It is very necessary that the medical profession should realize that, so far as adults in this country are concerned, a positive tuberculin reaction has no diagnostic significance whatever. Medical men with less experience of tuberculosis than Dr. Preston and Dr. Wilkinson might, if this fact were not appreciated, diagnose a patient as tuberculous because of a marked positive tuberculin reaction, put him through a long and expensive course of tuberculin treatment, and finally announce the "cure" of a "pathological" condition which had never existed.—I am, etc.,

Cardiff, March 9th. S. LYLE CUMMINS.

TREATMENT OF EMPYEMA.

SIR,—There seems to me reasonable doubt as to the soundness of Dr. Stacey Wilson's respiratory dynamics published on March 2nd (p. 419). Probably the improvement in lung expansion after the operation for empyema, which he attributes to his method of inducing the patient to make expiratory efforts with a closed glottis, is really due to deep inspirations, and to the physiological effect of the contractions of the bronchioles during expiration. His patients' lungs expand for the same reason that the almost solid lung of the newborn infant expands after birth. How does he account for the baby's lung and all the alveoli becoming distended with air, for the baby's tidal respiration would only fill the trachea, bronchi, and bronchioles? But the dilatation of bronchioles in inspiration is followed by contraction, and so before all the first intake of air is expelled a fresh inspiration is made through the now widely opening bronchioles; once again the inspired air is obstructed in escape, and so the lung becomes more and more distended till all the alveoli are expanded, otherwise the child has areas of atelectasis.

Fortunately surgeons have discovered that a chest wall may be opened—as, for example, for a chronic empyema—and that, so long as the visceral pleura is not opened, the partially collapsed lung will not collapse more, but will even expand and come up to the opening in the chest wall, provided the expansile force from within is not too much hampered—as, for example, by greatly thickened pleura. I certainly do not suggest that expiration with a closed glottis may not be some additional help. It helps the baby when born—hence the value of crying lustily—but this glottic closure is only part of the all-essential similar and coincident contraction of the bronchioles. In fact, the effort to close the glottis involves concomitant bulbar impulses to the co-responding bronchiolar contractions.

One may ask, too, how Dr. Ramsbottom explains his case (*a*)—March 9th, p. 443—of pneumothorax following perforation of the *parietal* pleura by a hatpin; surely it must have been due to lesion of the *visceral* pleura, which is totally different in result in the matter of lung collapse.

The practical clinical import of these bronchiolar contractions during expiration has been insufficiently recognized. I drew attention to this question twenty-six years ago in a contribution to the *Bristol Medico-Chirurgical Journal* of March, 1903; I would gladly forward a reprint of this to anyone interested.—I am, etc.,

Bristol, March 9th. PATRICK WATSON-WILLIAMS.

A COLLEGE OF OBSTETRICS AND GYNAECOLOGY.

SIR,—In your article on the above subject (March 9th, p. 462) you state that you understand that the project has the approval of every professor of obstetrics and gynaecology in the United Kingdom. That may be so; but, as one who practised those branches of medicine for thirty-eight years, and was a professor for thirty-two, I should like to give some reasons for my disapproval.

Your article states that the proposed movement is made with the object of encouraging the study and improving the practice of obstetrics and gynaecology. There is an old-standing society still in existence for this purpose—namely, the Section of Obstetrics and Gynaecology in the Royal Society of Medicine. This Section includes nearly all the teachers of those subjects in this country, and is one of the finest schools for the above purposes in the world; no information is afforded as to the ways in which its object could be better achieved by a college. It appears to me that the improvement in teaching depends on the individual teachers, and not on the college of which they are members. The further objects of the proposed college—"advising in regard to technical training, instituting lectures and demonstrations, and diffusing information on all matters relating to this branch of practice by means of periodicals, books, or other publications"—are already carried out by the present Royal Colleges, the Royal Society of Medicine, and the special and general medical press. The "institution of a post-graduate diploma" and the seeking of authority "to co-operate, if invited, with existing bodies in the examination of candidates for qualifying diplomas" seem to point to a desire to compete with the present licensing bodies, or, alternatively, to grant licences of a higher grade, which would lower the value of the present degrees and diplomas. There seems no probability that the licensing bodies will give the required invitation to their competitors to provide examiners, whom the Royal Colleges have hitherto chosen from amongst the same obstetricians and gynaecologists as would form the Fellows of the new college. In that case the diplomas would be honorary and post-graduate, and the intention would seem to be to stamp the F.C.O.G. as an individual superior in the practice of obstetrics and gynaecology to the F.R.C.P. or F.R.C.S. This would be resented by the holders of those qualifications.

There is no doubt that general practitioners are responsible for a good deal of bad obstetrics and gynaecology; but the remedy seems to be for the specialists to show that they do better work, and not to bemuse themselves with the idea that a new set of capital characters can be as easily attached to a man's work as appended to his name. The present movement is due to the neglect of obstetrics and gynaecology by the Royal Colleges. The Royal College of Physicians instituted a special diploma in 1783, and has conferred its Fellowship on a number of its obstetrical and gynaecological members; but it cannot be said—although Harvey, Blundell, Denman, Matthews Duncan, and others received that honour—that, in recent years, the Fellowship has been conferred as freely as on its medical members, or as the importance of the subject and the character of its practitioners deserved. An improvement in this respect is overdue, and would be welcomed, I think, by many Fellows who are not specialists. But to form a new college, which could not, at least for many years, compete in tradition, buildings, library, or funds with the existing Royal Colleges, would be to place obstetrics and gynaecology in a position of inferiority which its importance and achievements do not deserve. Far better would it be to extend the conjoint work of the two Royal Colleges by a complete amalgamation, as Clifford Allbutt suggested, into a Royal Academy of Medicine.—I am, etc.,

HERBERT R. SPENCER, M.D., F.R.C.P.

London, W.1, March 9th.

COLLES'S FRACTURE.

SIR,—In your issue of March 9th (p. 477) Mr. Cochrane expresses the view that the real cause of disablement after Colles's fracture lies in "neglect to reduce the forward luxation of the lower end of the ulna so frequently present," and calls attention to the fact that this was not explained in our article on fractures of the lower end of the radius, which appeared in the *British Medical Journal* of January 12th.

The reason of the omission is not far to seek. We are not familiar with forward luxation of the ulna in association with Colles's fracture. We regard the ulna as the fixed bone in relation to which the lower fragment of the broken radius suffers a variety of displacements. Even if Mr. Cochrane's description is interpreted as backward subluxation of the lower radial fragment upon the ulna, we still maintain that such is a rare accompaniment of this type of fracture. We have encountered the condition in not more than three cases in the last five years. The radial fragment when it is forced directly backwards in the shock of the impact, rotates around the ulna, the movement taking place at the lower radio-ulnar joint, and resembling the act of normal supination. In the most severe cases of backward displacement of the lower radial fragment it is conceded that such a subluxation may occur, but certainly no case of failure reported in the article to which Mr. Cochrane refers can be attributed to it.

Varying degrees of subluxation at the inferior radio-ulnar joint certainly do occur, however, in Colles's fracture, but in no sense can the subluxation be regarded as a forward luxation of the ulna. We refer to the altered relation of the articular surfaces of this joint caused by *backward tilt* of the lower fragment of the radius, which is the most constant displacement of Colles's fracture. The utmost care must be taken fully to reduce this displacement, so that the lower articular surface of the radius faces downwards and slightly forwards, a point upon which very great stress was laid in the article mentioned above. If full correction of this backward tilt is obtained, subluxation at the inferior radio-ulnar joint is reduced automatically.—We are, etc.,

HAROLD EDWARDS,
E. BELLIS CLAYTON.

London, W.1, March 11th.

PROGNOSIS IN ECLAMPSIA AND ALBUMINURIA OF PREGNANCY.

SIR,—Dr. James Young, in his letter of your issue of March 2nd (p. 419), brings forward further evidence in favour of his contentions. This is all to the good, and justifies the concluding paragraph of my first letter (February 16th, p. 320) that criticism would be helpful. For the moment this new evidence must be left for consideration before its ultimate importance and weight can be assayed in the subject under discussion. What I must evidently repeat is that at present no "positive" and "conclusive" evidence exists—words deliberately and intentionally chosen—that the kidneys are previously "healthy," using that word in its broadest sense, before the initial attack of toxæmia. What would Dr. Young call evidence based on the examination of the renal ability or disability of a large series of women before the first pregnancy and the result tabulated with the results and complications of their subsequent pregnancies? In comparison, his fresh evidence, though important (as every possible link is important in obscure problems under investigation), is evidence by inference only, if I may so describe it; the hypothetical investigation mentioned above may well be, in the present state of medicine and society, impossible, but I can assure Dr. Young that some, if only in a small way, are slowly collecting such evidence.

With regard to Dr. Young's remarks in the second paragraph of his letter, careful re-reading of my letter will show that I (quite intentionally) refrained from expressing personal "views." What I pointed out was that other workers had emphasized the difficulty in distinguishing "nephritic" from "toxic" cases, even with elaborate biochemical investigations. It is hardly an answer to reiterate that these workers have confused the issue in holding there are two conditions, not one. That is just the point I think where the views diverge.

Grateful, Sir, as I am for the room you have found for this correspondence, I am aware that the whole subject is so technical and one mainly for experts that I feel it would be more suitable for discussion in the columns of a paper devoted entirely to obstetrics, and having reason to

know that these questions will be examined and discussed elsewhere in a not far distant future, perhaps I may leave it at that.—I am, etc.,

Norwich, March 4th. ARTHUR CROOK.

MINOR ORTHOPAEDICS IN GENERAL PRACTICE.

SIR,—It gave me great pleasure as I read Professor John Fraser's address in the *British Medical Journal* of March 2nd (p. 383) to feel that I, a general practitioner, was so much in agreement with one in authority. With one statement alone did I not agree. Professor Fraser says a hallux valgus of any degree is almost invariably accompanied by flat-foot, and the *cause* in the majority of cases is flat-foot. Certainly half—I believe more than half—the cases of hallux valgus I have seen have not been accompanied by flat-foot. I know three middle-aged sisters each of whom has well-marked hallux valgus, and each has well-arched feet. Another patient, an elderly lady, with severe hallux valgus and a hammer-toe, had a well-arched foot.

I believe the commonest cause of hallux valgus to be the wearing of shoes with high heels and toes pointed out too far. I mean when the shoes are placed side by side the medial line of the foot (inside the shoe) traced forwards from the heel is turned outwards at the metatarso-phalangeal joint of the great toe. The foot is thus placed in the position of hallux valgus, and the high heels cause the weight of the body to press the feet more firmly into this incorrect shape. In support of the second part of this theory is the fact that the great majority of cases occur in women, even though men use equally badly shaped footwear.

But what disappointed me in Professor Fraser's address was that, after hinting that the cause of several of these distressing conditions of the feet lay in faulty footwear, he did not denounce the manufacturers of boots and shoes who give so much discomfort—and often anguish—to the wearers, and so much unnecessary labour to the consulting surgeon.

In relation to the prevailing shape of footwear I should like to point out the following facts:

1. When a baby's feet are placed side by side so that the heels and great-toe joints touch, then the great toes lie parallel and touch throughout their length. The same applies to the feet of a savage, whose feet are always bare. But I know of no place where shoes of this shape are obtainable ready-made for adults. From the metatarso-phalangeal joint the medial lines of all shoes and boots turn away from one another so that the contained great toes cannot lie parallel, but are forced apart to enclose a considerable angle between them.

2. A neat shoe can be made of anatomically correct shape, the only difference being that, when placed side by side, the feet would lose the appearance of being turned out, which the present shoe gives.

3. When I have approached those who sell shoes and discussed this point with them they say that a neat shoe of the desired shape can easily be made, but that no adult has a foot of that shape. That this is so I can affirm. I have never seen an adult accustomed to wearing boots or shoes who can place the feet side by side and show the great toes lying parallel. There is, however, hope for the coming generation if those in authority will denounce the modern shoe and direct the shoe manufacturers in the way they should go. I believe they are quite ready to listen.

—I am, etc.,

R. A. MURRAY SCOTT, M.B., B.Chir.Cantab.

Leeds, March 4th.

CEREBRAL ANGIOSPASM.

SIR,—Recent correspondence regarding cerebral angiospasm prompts me to draw attention to an article on this subject (*British Medical Journal*, May 16th, 1914) by Professor William Russell of Edinburgh, which was reprinted in his book *The Sphygmometer: Its Value in Practical Medicine* (Baillière, Tindall and Cox, 1921). Anyone who is interested in this phenomenon will derive a good deal of benefit from the perusal of this article.

In my experience cerebral angiospasm is by no means uncommon. I have a patient whom I have observed for more than seven years, a man over 70 years of age, who has had numerous attacks. He is now so well schooled in the premonitory symptoms that he can prevent an attack by taking 1/4 grain of erythrol tetranitrate. In the many attacks during which I have seen him he has suffered from hemiplegia and loss of speech. These have invariably passed off quickly following 1/2 grain of erythrol tetranitrate. Phenacetin I have found equally useful.

I feel perfectly sure that it lies within the power of anyone to prevent in these subjects such a disastrous consequence as cerebral softening, if only the varied manifestations of cerebral angiospasm are kept in mind.—I am, etc.,

P. H. J. TURTON, M.D.Ed.

Heanor, nr. Nottingham, March 9th.

SIR,—I have notes on a case diagnosed as cerebral angiospasm which I saw in 1922. A man, aged 56, woke up one morning early with a feeling of oppression; he was confused and hemiplegic. The paralysis passed off in twelve hours, but returned in twenty-four hours; a few hours later it again disappeared but recurred and passed off as quickly, save for a slight dragging of one foot. The urine was normal, and so, apparently, was the heart. The blood pressure was 300; it was tested several times, and treatment reduced it to 230 mm. The patient kept well for eighteen months; then one morning while shaving he had precordial pain, returned to bed, and sent for me. I was auscultating the heart when I heard its beats cease. Mistrusting my ears I looked up at his face; he was dead. —I am, etc.,

Darlington, March 5th. W. W. FORSYTH, M.B.

VACCINATION IN THE LIGHT OF RECENT EXPERIENCE.

SIR,—It would be of very great interest to the average medical officer of health if some authoritative pronouncement could be made on the relation between alastrim and small-pox. If they really are two distinct diseases, how are they to be distinguished? The question is of vital importance if the subject of vaccination is raised. Is it worth while going to the trouble of searching out and following up contacts, and insisting on vaccination, for a disease which, according to some authorities, is merely like a mild chicken-pox? In the second place, why vaccinate a contact and thereby almost certainly prevent him from working for a number of days, when this measure is to protect him against risk of infection by a disease so mild as not to be worth worrying about?

But are there two diseases? Obviously the Ministry of Health does not think so, or it would not require such stringent regulations carried out. Furthermore, is it always possible to say definitely that one is dealing with alastrim or with small-pox? Alastrim, it is said, does not kill; neither does mild scarlet fever, but it is quite capable of infecting another child so that a fatal result ensues.

Surely alastrim is only mild small-pox, and it does not breed true, despite Dr. R. P. Garrow and others. In Yorkshire in 1927 I had an outbreak of small-pox in which the initial cases were so slight that some patients had not even called in a doctor; yet these cases infected others, one girl so severely that the medical superintendent of the hospital to which she was admitted, a man of much experience, anticipated her death. She eventually recovered, but for a time her eyesight was in danger. Needless to say, her rash was typical of small-pox. Doubtless I shall be told that the first cases, though mild, were really true small-pox; but how is one to know that in the first place?

There is another side to the picture. Last year I was called to the union infirmary to examine a tramp with a severe attack of typical small-pox; his face was covered with confluent or semi-confluent pustules. He was delirious, his pulse was poor, and he was pulled through only by dint of careful nursing. But in due course certain of his contacts at a common lodging house developed small-pox; all of these were quite unprotected by vaccination; yet their only symptoms were a few spots, with practically no malaise or discomfort at all. Indeed, had it not been for the first case, and the fact that they were being inspected daily, I am confident that their disease would not have been recognized, for no one would have seen it.

In view of the above facts, what is one to think except (1) that small-pox, like scarlet fever, affects some severely and others mildly; (2) that it appears sometimes in severe epidemics and sometimes in epidemics of the type generally prevalent to-day; and (3) that the types—that is, mild (alastrim) and severe (small-pox)—do not breed true to type, but true to disease, of which there is one?

In view of the fact that we do not know how each individual will be attacked by the disease, we still advise vaccination in epidemic times and safeguard our contacts as well as we can. Thus do we endeavour to limit the spread of the disease, which, though mild to many at the present time, is severe to the few. Unfortunately we do not know which the few will be, nor do we know even how long the present mild type will persist.—I am, etc.,

F. A. BELAM, M.D., D.P.H.,
M.O.H. Guildford.

March 4th.

PYORRHOEA ALVEOLARIS.

SIR,—I write to endorse the remarks of Mr. J. H. Badcock on February 23rd (p. 373) with reference to the value of the regular use of the toothbrush in oral hygiene.

Some few months ago I was asked to undertake the duties of part-time regional dental officer. A large percentage of the patients I have seen are "working" folk of middle age, to whom the use of the toothbrush has been unknown from one year's end to the other. Suffering from digestive troubles, they have been referred by their medical man to their dentist, and he has marked their mouths for a wholesale clearance of the teeth. An oral examination in every case reveals a similar state of things—a more or less complete set of teeth, discoloured and unutterably dirty, with considerable deposits of "tartar" in each jaw, and a general septic gingivitis and alveolar absorption. As a consequence the teeth, though often free from caries, are loose, and owing to their unwholesome condition worse than useless for the purposes of mastication. Without doubt pyorrhoea alveolaris in such cases is a dirt disease, and preventable, and one never sees, as I know from over thirty years' experience in private practice, such a state of things in the mouths of people with whom the intelligent use of the toothbrush has been a matter of daily routine.

The truth is that there are millions of people in this country who to-day are ignorant of the fact that daily cleansing of the mouth can affect their health one way or the other. In the present generation this continued neglect has done its work, but if the boys and girls of the working classes can only be induced to understand the necessity of a clean mouth, the daily use of the toothbrush would make such cases as I have described relics of an age which forgot to brush its teeth.—I am, etc.,

F. C. PORTER.

Nottingham, Feb. 27th.

The Services.

HONORARY SURGEON TO THE KING.

COLONEL F. G. PROUDFOOT, T.D., Assistant Director of Medical Services, 48th (South Midland) Division, Territorial Army, has been appointed Honorary Surgeon to His Majesty the King, with effect from February 16th last.

DEATHS IN THE SERVICES.

Surgeon Lieut.-Colonel William Michael Courtney, Bengal Medical Service (ret.), died on December 2nd, 1928, aged 83. He was born on September 29th, 1845, the son of Patrick Courtney, Esq., of Drogheda, was educated at the Ledwich school of medicine in Dublin, and took the L.R.C.S.I. and L.A.H. in 1868. Entering the I.M.S. as assistant surgeon on October 1st, 1869, he became surgeon major after twelve years' service, and surgeon lieutenant-colonel when that rank was instituted in 1891, retiring on December 7th, 1895. He spent his whole service in military employment, and served on the north-east frontier of India in the Daphla campaign of 1873-74; in Burma in 1886-87, gaining the medal and clasp; and in the Chin Lushai campaign of 1889-90, receiving a clasp.

Lieut.-Colonel Phirozsha Jamsetji Damania, Bombay Medical Service (ret.), died on December 13th, 1928, aged 77. He was born on August 29th, 1851, was educated at the Grant Medical College, Bombay, where he took the L.M.S. in 1876, and, after coming to England, the L.S.A. in 1877 and the L.R.C.S.Ed. in 1878. He entered the I.M.S. as surgeon on March 30th, 1878, attained the rank of lieutenant-colonel after twenty years' service, and retired on October 28th, 1898. He served in the Afghan war in 1880-81, receiving the medal, and in Burma in 1885-87, gaining the medal with a clasp.

Lieut.-Colonel Cecil Edward Bulteel, Indian Medical Service, died on December 20th, 1928, aged 51. He was born on August 17th, 1877, was educated at King's College, London, and took the M.R.C.S., L.R.C.P.Lond. in 1901. Entering the I.M.S. as lieutenant on September 1st, 1902, he became lieutenant-colonel on March 1st, 1922. His service had been spent in military employ, and his last appointment was the command of the Indian military hospital at Belgaum. He served on the north-west frontier of India and in Afghanistan in the third Afghan war in 1920-21, was mentioned in dispatches in the *London Gazette* of August 3rd, 1920, and received the O.B.E. on January 1st, 1920.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE John Lucas Walker studentship of £300 a year for original research in pathology has been awarded to Neil E. Goldsworthy, Ph.D., for three years.

At a congregation held on March 9th the following medical degrees were conferred:

M.B., B.CHIR.—G. W. Pimblett, R. G. Apthorpe.
M.B.—W. E. Underwood.
B.CHIR.—E. A. E. Palmer.

Congregations will be held next term on April 26th, May 11th and 24th, and June 8th, 15th, and 18th.

UNIVERSITY OF LONDON.

THE Senate at its meeting on February 20th resolved:

(1) That the Department of Hygiene and Public Health at University College be closed on July 31st, 1929, and that the work for the Diploma in Public Health and for post-graduate and research students in hygiene hitherto carried on in that department, in conjunction with that in bacteriology carried on in the University College Hospital Medical School for candidates for the Diploma in Public Health, be transferred as from the same date to the London School of Hygiene and Tropical Medicine.

(2) That the teaching of epidemiology and vital statistics for the Diploma in Public Health be transferred to the London School of Hygiene and Tropical Medicine as from August 1st, 1929.

(3) That the teaching of, and direction of research in, epidemiology and vital statistics, except for the Diploma in Public Health, at present undertaken by a Reader at University College, be continued in the Department of Applied Statistics and Eugenics at University College.

(4) That the Department of Municipal Engineering at University College be reorganized, and as from August 1st, 1929, be known as "The Department of Municipal Engineering and Hygiene."

Candidates for the degree of Ph.D., which is to be instituted in non-clinical subjects for internal students in the Faculty of Medicine, will be required to hold, in a branch of study akin to that in which they propose to proceed to the Ph.D. degree, the degree of M.B., B.S., or B.D.S., or B.Pharm. The regulations for the Ph.D. degree are to be amended accordingly.

The ceremony of Presentation Day will be held in the Albert Hall on Wednesday, May 8th, at 2.30 p.m., and the graduation dinner will take place at 8 p.m. on the same day in the Merchant Taylors' Hall, Threadneedle Street, E.C.

A course of lectures on mental deficiency, supplemented by a course of clinical instruction, will be held from May 27th to June 1st. A course, mainly for those of the school medical service, for the purpose of studying exceptional conditions allied to mental deficiency, will be held from June 3rd to 8th. Full particulars may be obtained on application to Miss Evelyn Fox, care of the University Extension Department, University of London, S.W.7.

Applications for grants from the Dixon Fund for assisting scientific investigations must be sent in between April 1st and May 15th, accompanied by the names and addresses of not more than two persons to whom reference may be made. Full particulars may be obtained from the Academic Registrar.

UNIVERSITY COLLEGE.

A Bayliss-Starling Scholarship of about £120 for physiology and biochemistry will be awarded by the University College Committee in June next. Candidates must submit, on or about May 15th, to the Secretary of University College, London, a statement giving full particulars of his educational career and of his qualifications for entering on a course of training in the principles and methods of research.

UNIVERSITY OF MANCHESTER.

THE Council and Senate adopted a resolution on March 5th asking the University Court to authorize conferment of the degree of Doctor of Science (*honoris causa*) upon Sir Ronald Ross, K.C.B., M.D., F.R.S., in recognition of his great work in the prevention of malaria. It is proposed to confer the degree on Founders' Day, May 15th, two days after Sir Ronald Ross's seventy-second birthday.

UNIVERSITY OF SHEFFIELD.

MR. VINCENT TOWNROW, F.R.C.S., has been appointed lecturer in diseases of the ear, nose, and throat, and Dr. Rupert Hallam lecturer in dermatology.

Obituary.

CLEMENS PIRQUET, M.D.,

Professor of Paediatrics in the University of Vienna.

THE medical profession has lost one of its most notable members by the tragic death of Freiherr Clemens Pirquet.

Clemens von Pirquet was born in Vienna in 1874, and in that city he has died, leaving behind him, as a memorial of his indefatigable work in the cause of the children, the Children's Hospital and Clinic attached to the University of Vienna, in the development of which he played such a prominent part. He was educated at Kalksburg, and later in the Universities of Vienna and Graz, obtaining the M.D.Graz in 1900. For some years after this he acted as assistant to Professor Escherich, and in 1908 became professor of paediatrics at the Johns Hopkins University at Baltimore. After two years he returned to Europe, and, first at Breslau and later at Vienna, he built up for himself a world-wide reputation. Immediately after the war Pirquet, who had now discarded the "von," threw himself whole-heartedly into co-operating with various agencies which sought to succour the children of Austria. With an amazing administrative ability and grasp of detail he combined an immense knowledge of the scientific aspects of nutrition, so that he was able to advise as to the best methods of distributing food and money down to the last crumb and farthing. Then followed the acceptance of an invitation to return to America, but, once across the Atlantic, nostalgia set in, and Pirquet returned to Vienna to the clinic to which all students of paediatrics have felt themselves drawn at one time or another.

Of Pirquet's contributions to medical science the cutaneous tuberculin reaction which bears his name is known to a wide circle, but although of great value in illustrating the clinical conception of allergy which he introduced, and demonstrating the wide distribution of tuberculous infection, this represents to a more limited section of the scientific world only a very small part of his labours. His work on the assessment of the state of nutrition of children by measurement of the weight and sitting height, the mathematical formulae devised to express an "index of nutrition," and the correlation of this with the dietetic requirements as illustrated by his "nem" system, was the most important piece of collected and sustained research for which Pirquet was responsible: and for this he will be most gratefully remembered by posterity. This system of nutrition was by no means easy to follow, as was indicated by the reviewer of a second edition of a work by Pirquet and his associates on the nutrition of healthy and sick children, mentioned in these columns last year (May 19th, p. 851), but no one belittled the sound basis of Pirquet's views on human nutrition, and he had abundant opportunity for the practical application of his ideas during the starvation period in Vienna. His "Pelidisi" system for estimating and recording the state of nutrition of children by observation of the skin, muscle tone, etc., was an extension of the sitting height and weight formula: again, while not easy to follow, especially in some of its clinico-mathematical conceptions, the system was essentially scientific, and has formed a basis for many inferior systems in other parts of the world.

Pirquet's work and writings have had considerable influence on paediatrists, especially of the German- and English-speaking races during the pre-war years, and his stimulating presence and gracious manner will now be sadly missing from the Vienna school. Many of those for whom the opportunity of visiting Pirquet there had not yet arrived were looking forward to hearing him open a discussion on the prevention and cure of tuberculosis in early childhood at the Annual Meeting of the British Medical Association in Manchester this year, and their disappointment will be keen. The children of the world have lost a great friend—he was president of the Union Internationale de Secours aux Enfants—the medical profession has lost a great leader, and the Austrian nation a cultured nobleman who loved his people dearly and served them well.

DR. CHARLES PAGET LAPAGE, president of the Section of Diseases of Children at this year's Annual Meeting of the British Medical Association in Manchester, sends the following appreciation: The untimely death of Professor Clemens von Pirquet is a very great loss. Only his own country, which has benefited so much by his work, can estimate fully the greatness of that loss, but those of us who knew the value to paediatrics of his initiative and energy and clear thinking feel that we have lost a leader and a great man. He was coming to Manchester in July to open a discussion in the Section of Diseases of Children on tuberculosis in infancy and early childhood: its prevention, diagnosis, and cure. In a letter on January 24th he keenly discussed all the arrangements for this meeting, and concluded, "Looking forward to see this part of England." We in Manchester, therefore, feel a keen sense of personal loss that death has deprived us of the opportunity of meeting and hearing this outstanding physician.

CLIVE RIVIERE, M.D., F.R.C.P.,

Physician to the City of London Hospital for Diseases of the Chest and to the East London Hospital for Children.

THE death of Clive Riviere is an irreparable loss, not only to the Chest Hospital, which he served so well, and to all his friends, but to progressive medicine. He inspired confidence, admiration, and affection in all who knew him—confidence in his judgement, admiration for his skill and character, affection for his gentle and unselfish disposition. He was ever thoughtful and considerate for others. He was devoid of all pettiness, and any feelings of jealousy were entirely foreign to him. With a mind of great originality was combined a high order of technical skill, and it was a delight to watch his work. His sensitiveness to suffering in others served as a constant stimulus to him to aim at its relief, and he was continually thinking over and devising new ways to alleviate or to cure conditions that were regarded as hopeless. Of a family of artists, he was himself an artist. He was a man of wide interests and culture, fond of music and reading, loving the beauty of simple things, the countryside, and the sunshine. With all his qualities of greatness, with a world-wide reputation that his work and his writings had justly given him, he was the most shy, the most humble-minded and modest of men. In him we have lost one who was indeed the very pattern of an English gentleman and a great physician, who was at once a master and a friend.

He was born in 1872 at Charlton Kings in Gloucestershire, son of Briton Riviere, R.A. His mother was a daughter of John Dobell and a sister of Sydney Dobell. He was first educated at St. Andrews University. It may surprise those who knew him to learn that there he distinguished himself at golf. In fact, he was excellent at all games demanding quickness of eye and delicacy of touch. He rarely played them, however, and never in his later years, as he found life too full to spare time for games. These faculties, however, combined with an artistic sense and a very musical ear, undoubtedly helped him to achieve eminence in his particular branch of medicine. After St. Andrews he was sent to University College School, and thence to University College. He began his professional training at St. Bartholomew's, where he gained the Brackenbury Scholarship and became house-physician, casualty physician, and demonstrator in pathology. He was qualified in 1898, when he obtained the M.B. of London University. In 1900 he gained the M.D. and the M.R.C.P., and in 1909 the Fellowship of the Royal College of Physicians. While at St. Bartholomew's he began to take a special interest in affections of the chest, one of his earlier papers being "Non-tuberculous fibrosis in children," which appeared in the *St. Bartholomew's Hospital Reports*. After a period at Tübingen University he became registrar at Great Ormond Street, then physician to the Shadwell Hospital for Children, from which he resigned in 1928, and finally physician to the City of London Hospital for Diseases of the Chest, Victoria Park, where he was actively engaged in progressive work until the time of his death. It was

here that he did the work that gained for him a world-wide reputation. He was one of the pioneers of artificial pneumothorax treatment in this country, and he lived to see a general adoption of this wonderful method which he championed through many years of neglect. His book on the subject is classic. His next most valuable contributions to medicine were his insistence and instruction on the early diagnosis of pulmonary tuberculosis, which he rightly held to be of such vital importance in successful treatment, and his work on the development of the surgery of the chest. His teachings on the former are incorporated in his book *The Early Diagnosis of Tubercle*, a masterpiece of lucidity and breadth of view, qualities which characterize all his writings.

It is a tragedy that his work was cut short at a time when great advance is being made in thoracic surgery, in which he would have continued to take an important and progressive part. He was for ever devising new and improved methods, and at the time of his death was working out a new operation for apical collapse to take the place of the present unsatisfactory measures for apicolysis. Among other achievements must be mentioned his writings on tuberculin treatment and bronchiectasis. Although a physician to a children's hospital, he was not so well known in this respect. Many cases, however, of tuberculosis in young children gravitated to him, and he was greatly interested in them. Children at once took to him and loved him.

His last act was one of characteristic devotion to duty. Feeling far from well, he went, on a bitterly cold evening, to see a nurse at the hospital who was desperately ill with pneumonia. He came back, and in a few hours had a rigor. Pneumonia set in, and was accompanied by a most painful diaphragmatic pleurisy. After four days he was much better, but on the fifth night a pneumonic area on the other side spread rapidly, and he was overwhelmed by it and died the following afternoon of heart failure.

F. G. C.

Dr. ROBERT HUTCHISON writes: By the sudden and untimely death of Clive Riviere the profession has lost a man of a type that can ill be spared. He might be described as being in the best sense of the word a gentleman, and he will be held in remembrance more for what he was than for what he did. Modest, kindly, and courteous, he was truly one who envied not, vaunted not himself, was not puffed up. He loved all beautiful things and hated everything ugly, mean, or pretentious, and his many friends will always be grateful for the example of a character of so much charm. Their sympathy will also go out in full measure to her who shared with him twenty-three years of singularly happy married life, and who was always his chief friend and companion.

ROWLAND HILL COOMBS, M.D., M.R.C.P.,

Consulting Physician to the Bedford County Hospital.

WE regret to record the death, at the age of 84, of Dr. R. H. Coombs, which took place at his home in Bedford on March 3rd.

Rowland Hill Coombs, eldest son of Dr. James Coombs, was born at Bedford, receiving his early education first at the Modern School and afterwards at Bedford School. In 1852 he entered as a student at St. Bartholomew's Hospital, qualifying L.S.A. and M.R.C.S. in 1866, and L.R.C.P. in 1867. In 1884 he graduated M.D.Durham. In 1922, being then in his seventy-eighth year, he passed the examination for Membership of the Royal College of Physicians of London; probably he was the oldest candidate who ever sat for that examination. For more than fifty years Dr. Coombs was physician to the Bedford County Hospital, and at his jubilee presentations were made to him by the staff, and he was entertained to dinner by the medical men of Bedford. For many years he was surgeon to the Bedfordshire Militia and lieutenant-colonel in the Royal Militia Staff Corps; later, when the Militia was incorporated into the Special Reserve, he held the rank of surgeon lieutenant-colonel in the Bedfordshire Regiment. Among his other medical appointments were those of medical officer to Elstow School and medical officer to the Isolation Hospital of the Bedford Rural District Council. Some years ago he retired from private practice, but continued to carry on the duties of his public appointments till a few days before his death.

Dr. Coombs played an important part in the public life of Bedford. He was the oldest justice of the peace for the borough, his appointment dating from 1894, a trustee of St. John's Hospital and of the Bedford Municipal Charities, and a former director of the House of Industry. In 1909 he became Deputy Lieutenant of the County, an office he held until his death. As long as he could he attended the bench and carried out his duties as magistrate.

During the greater part of his professional life Rowland Coombs was an active member of the British Medical Association. He held office as president of the South Midland Branch in 1894; from 1901 to 1903 he was a member of the South Midland Branch Council. From 1904 to 1906 he was on the executive committee of the Bedford and Hertfordshire Division, and acted as its representative at the Annual Representative Meetings from 1904 to 1912. In 1910–11 he represented the Territorial Services on the Naval and Military Committee of the Association. He is survived by a son,—Dr. H. M. Coombs, who practises in Bedford—and by three daughters.

News has been received of the death of Dr. CHARLES M. EKINS at Alexandria on February 10th. Son of the late Major-General Ekins of the Indian Army, Charles Ekins studied medicine at University College Hospital, qualifying M.R.C.S., L.R.C.P. in 1900. During his student days he was a prominent Rugby footballer. After serving as a civil surgeon with the R.A.M.C. during the South African war, Ekins went to Egypt twenty-five years ago. Entering the Egyptian Government's Public Health Department, he served for several years in the provinces, and in 1906 was appointed director of the Alexandria State Hospital. There he remained for eighteen years, during which period he set himself to organize the hospital and to make and keep it efficient. From this Government post he retired in 1924, having done excellent service and gained the esteem and affection of all his colleagues, and established himself in practice in Alexandria. On January 1st, 1928, he was appointed physician, and on July 1st, 1928, medical director, to the Anglo-Swiss Hospital. Ekins was not only capable, but he was very human, optimistic, and kindly; he will be greatly missed by patients and by hosts of friends. He married eighteen years ago, and is survived by his widow.

We have to announce the death, at the age of 47, of Mr. DOUGLAS W. HUME, which occurred suddenly at his home in Bangor on February 12th. Mr. Hume received his medical education at St. Bartholomew's Hospital, obtaining the diplomas M.R.C.S., L.R.C.P. in 1906, and graduating M.B., B.S.Lond. in 1907. In 1914 he became a Fellow of the Royal College of Surgeons of England. In the course of a distinguished career at St. Bartholomew's Hospital he was awarded the Matthews Duncan exhibition in 1906, and the Bentley prize in 1909. During the period 1909–10 he was president of the Abernethian Society. For a short time after qualification he was house-physician to the East Sussex Hospital at Hastings, but returning to St. Bartholomew's Hospital he held a series of appointments from 1907 to 1915, including those of senior resident anaesthetist, house-surgeon, and ophthalmic house-surgeon. In 1915 he obtained the commission of major in the R.A.M.C., and until 1919 was surgeon specialist to the Norfolk War Hospital with charge of 1,040 beds. From 1919 to 1922 he was superintendent of two Ministry of Pensions hospitals at Exeter, remaining there till January, 1923, when he engaged in practice at Bangor, being shortly afterwards appointed honorary surgeon to the Carnarvonshire and Anglesey Infirmary. Mr. Hume was the author of a number of papers, including "A case of natural appendicostomy" (*St. Bartholomew's Hospital Journal*, 1910), "Ligature of subclavian artery for aneurysm" (*British Medical Journal*, 1910), "Ilio-tibial band grafts for cure of inguinal hernia (*British Medical*

Journal, 1921), "Slipping peroneal tendon treated by Kelly's operation" (*British Medical Journal*, 1922). Dr. J. Wilson Reid (Beaumaris, North Wales) writes: The death of D. W. Hume is a great loss to surgery in North Wales. The accuracy of his diagnosis and the excellence of his technique were only matched by the pains he took over every case, no matter how trivial. He was of a very retiring disposition, and never valued his own opinion highly enough, so that the world of medicine and surgery will lose by the fact that he did not publish more. He will be affectionately remembered by all who came in touch with him. The gap which his death leaves in our midst will be very difficult to fill.

The death took place in London, on February 28th, of Dr. ALISTAIR JAMES MACGREGOR, who formerly practised in Dunfermline and acted as medical officer of health for the burgh. Dr. Macgregor was a son of the late Dr. Duncan Macgregor of Pathhead and Tranent. He graduated M.B., C.M. at Edinburgh in 1888, proceeding to M.D. with honours in 1892. Shortly afterwards he commenced practice in Dunfermline, where he was a highly respected practitioner for between thirty and forty years. After taking the D.P.H. of Edinburgh in 1905, Dr. Macgregor became medical officer of health for Dunfermline, a post which he held till his retirement three years ago, when the post was filled by a whole-time medical officer. In this appointment he acted as medical superintendent of the West Fife Hospital for Infectious Diseases, and as tuberculosis medical officer to the Dunfermline Insurance Commission. He was also parochial medical officer for Dunfermline burgh and police surgeon. Dr. Macgregor took a great interest in many of the social activities of Dunfermline, and in particular was a prominent member of Dunfermline cricket club, being a cricketer well known throughout Scotland. He is survived by a widow and daughter.

Dr. JAMES STIRLING ROBERTSON, who died on February 13th, at his residence in Clydebank, after a brief illness, was the oldest member of the profession in the district. He received his medical education at Edinburgh, where he graduated M.B., C.M. in 1883. A colleague writes: So long ago as 1886 Dr. James Robertson was elected a member of the London Fabian Society, where, under the influence of its distinguished membership, and of his own natural bent, he became greatly interested in social problems, which presented themselves in plenty in the area where he practised. He was a J.P. for Forfarshire, a member at one time of the education authority, an active member of the British Medical Association, and chairman of the Local Panel Committee. He was a well-informed contributor to the press on social topics, and a highly esteemed member of the medical profession. His breadth of outlook, his keenness of mind, and his kindly counsel will long be remembered with gratitude.

Dr. PRICE MORRIS, who died on February 27th, at the age of 78, was for many years a well-known and popular figure in the district of Colwyn Bay and Colwyn. He was born in Llanfair Talhaiarn, where, at the early age of 16, he used to go about with Dr. Davies, the old custom of apprenticeship for a doctor being still prevalent. After his apprenticeship he went to Anderson College, Glasgow, where he obtained in 1874 the diplomas L.R.C.P.Ed. and F.R.F.P.S.Glas. After practising for a time at Hebden Bridge, near Halifax, and later in Cwmaman, Aberdare, he returned to Llanfair Talhaiarn, where he built up a most extensive practice over a sparsely populated area, removing later to Colwyn. From then until 1923, when failing health necessitated his retirement, he was engaged in active practice. He was very fond of fresh-water fishing and horses; he was chosen on several occasions to act as a judge of horses in the Colwyn Agricultural Show. In his early years he found time to ride to hounds with the Flint and Denbigh pack. In 1897 the Colwyn Bay Cottage Hospital was built; Dr. Morris, who was one of the prominent movers in its inception, held the appointment of senior surgeon to it until 1911, when he became consulting surgeon. For thirty years he was parish medical officer and vaccination officer to a district which included Colwyn Bay, Rhos, Glanconway, Dafarn Newydd, and Llysfaen. In the middle period of his life he was very fond of walking, and few of its inhabitants knew so intimately the geography of North Wales, especially West Denbighshire and the mountains and valleys of Merionethshire and Carnarvonshire. A colleague (A. N. L.) writes: Dr. Price Morris's merits as a doctor were outstanding, and he met with success in every sense of the term for very many years. He was an exceedingly shrewd diagnostician who always knew his own mind, and was able to penetrate to the essential feature of a case while others were groping among the non-essentials. His very determination inspired his patients with the will to get better, and his visits have often been described to the writer as resembling a breath of sea breeze in the sick bedroom. He had the faculty of expressing himself in such a manner that he was always carefully listened to and his advice followed; though in no way eloquent, his arguments were cogent and clear, and at times he could be extremely dogmatic. For instance, in emphasizing the importance of fresh air in a case of consumption, he had been known to put his stick through the window of the cottage bedroom. His life was spent in the service of humanity, and in his business relations, as well as in his professional work, he was always kindly and considerate to others.

Dr. FREDERICK CLAUDE EVILL, who died on March 3rd, at the age of 67, was the senior medical practitioner in Barnet, where he had practised since 1897. He received his medical education at St. Bartholomew's Hospital, and obtained the diplomas M.R.C.S., L.R.C.P. in 1886. After holding house appointments at St. Bartholomew's, the Central London Ophthalmic Hospital, and the Brompton Hospital for Consumption he went to Australia, and conducted a practice at Broken Hill, New South Wales, where he was senior surgeon to the local hospital. On returning to England he settled in Barnet, and was appointed surgeon to the Barnet Victoria Cottage Hospital. Apart from his medical practice he found time for active work in connexion with the Chipping Barnet Parochial Church Council and the National Society for the Prevention of Cruelty to Children. He had been a member of the Hertfordshire Medical and Panel Committees since their formation in 1912, and at one time was chairman. He was a strong supporter of the British Medical Association, and served on the Metropolitan Counties Branch Council from 1913 to 1926; he was vice-chairman of the West Herts Division in 1914, 1917–18, and in 1927, and chairman in 1915, 1919–20, and 1927–28. Ill health compelled his retirement from practice, but it was hoped that he would recover his strength; his regretted death was, therefore, unexpected. A colleague writes: We shall all miss Dr. Evill very much. He was of a particularly gentle disposition, and made an extraordinarily good chairman of our medical committee, his good nature acting like oil on the troubled waters of controversy.

THE LATE DR. J. F. BULLAR.

DR. A. NIVEN ROBERTSON writes: As one of the many house-surgeons at the Free Eye Hospital of Southampton who had the good fortune to be trained in eye work under Dr. Bullar I would like to add a few words to your obituary notice (February 2nd, p. 230) in appreciation of his great work at Southampton. He was the founder and maker of the Free Eye Hospital. When he started specializing in ophthalmic work in Southampton there was no eye hospital. He started a small eye clinic in one of the obscure streets of the town along with his faithful assistant, Miss Monk, the present matron of the Free Eye Hospital. It began in a very small way, but with his great skill and ability it was not long before he obtained a name as a skilful ophthalmic surgeon, and the patients became so numerous that his activities were transferred to the building which is now the Free Eye Hospital of Southampton. This consisted of a large villa in its own grounds, and under the able administration of its founder, with the help of others whom he interested in his projects, this villa was gradually converted into a first-class hospital, with in-patients. The top floor contained the female cases and the ground floor the male

cases. A room on each floor was added as an operating theatre. Previously the bathroom was the only theatre. A spacious waiting room was built, a dispensary was added, and all modern appliances were obtained, such as a large electro-magnet for the removal of foreign bodies. The docks always supplied a large number of such casualties. What astonished me most on my arrival there was that the chief did all his refractions in a room practically undarkened. I felt that it was an impossible task to do refractions in the light, but soon found that it was easy. He was a very skilful operator, and a past-master in the specialty which he had taken up. With all his patients he had a kindly way, and possessed a great gift of pawky humour. He treated all, rich or poor, alike. Sometimes to the wealthier classes, whom he treated at his own consulting rooms in Carlton Crescent, he seemed a little brusque, but he had a kind heart beneath his occasional off-hand manner, and I shall always remember the merry twinkle of his kindly eyes. He had no "side" about him; he was honest, and he was beloved by all who really knew him.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

The Local Government Bill.

Committee Stage in the House of Lords.

As briefly reported in this column last week, the House of Lords, in committee on the Local Government Bill on March 5th, discussed amendments to safeguard voluntary hospitals. Lord ONSLOW, who was in charge of the bill for the Government, moved an amendment of Clause 2. This amendment deleted the words "elsewhere than in the County of London" from a provision regarding the functions of Poor Law authorities in respect of infant life protection. Before amendment this section ran:

"functions under Part I of the Children Act, 1908, shall, elsewhere than in the County of London, be discharged by the councils of counties and county boroughs as functions under the Maternity and Child Welfare Act, 1918."

The House agreed to the amendment.

Clause 4 relates to administrative schemes, and provides that within six months after the passing of the Act the council of every county and county borough should prepare, and submit to the Minister of Health, a scheme of the administrative arrangements for discharging the functions transferred to the council under the Act.

Lord Reading's Amendment.

Lord READING moved to add the proviso:

"In so far as such scheme relates to hospitals the council shall take reasonable steps to seek and to continue to secure full co-operation with every voluntary hospital within, or serving the area of, the council."

He said he proposed this in the interest of voluntary hospitals to ensure that there should be full consultation with them before any action was taken which might impair their usefulness. These hospitals were in danger of being injured if the bill remained as at present. His purpose was to ensure co-operation with the voluntary hospitals and co-ordination so that there might be no overlapping of the work of rate-supported hospitals and voluntary hospitals, and so that the voluntary hospitals might be consulted in order that the best use might be made of existing institutions. This was intended by the framers of the bill. The words he proposed to insert were taken from the Local Government (Scotland) Bill, and appeared there almost identically in Clause 27. He knew the Minister of Health was in full sympathy with the idea. They should make quite clear what was the intention of the bill. He noted that an amendment on the subject had been put down by the Government that day which proposed to ensure that county councils should make such arrangements as they thought desirable for securing that the functions transferred to them should be exercised in consultation with some body in their area representing the voluntary hospitals. Lord Reading said he thought this provision would allay the apprehensions of those who were concerned with the voluntary hospitals. He asked whether, when the bill became law, the Minister of Health would draw the attention of councils to this proviso, because the clause as it stood was not mandatory. Supposing that under the functions conferred by the bill a council wished to start a new rate-aided hospital, he hoped the Ministry would emphasize that the council should first ascertain from the voluntary hospital that it was unable to do the work better. If the voluntary hospital was doing the work, and could perhaps do it better with the aid of the council, then it would be wrong to start a rate-aided hospital whose functions would overlap those of the voluntary hospital.

Lord Dawson's Amendment.

Lord DAWSON OF PENN had given notice to move to add to the clause:

"A council in preparing a scheme under this section shall have regard to the desirability of consulting (*a*) any body existing in the area which is so constituted as to be representative of the voluntary hospitals in the area, and (*b*) any body existing in the area which is so constituted as to be representative of the duly qualified medical practitioners in the area, including those on the medical and surgical staffs of any voluntary hospitals in the area."

He said he understood that for the convenience of the House all the amendments connected with hospitals were to be discussed together. He did not think that voluntary hospitals required any defence. Without them medical progress and the progress of nursing would not exist. He did not contemplate that in future there would be voluntary hospitals alone. Inevitably municipal hospitals must arise. They would arise slowly, and in their beginnings they should have the advantage of consultation with the great voluntary hospitals which now existed, and be brought into touch with their traditions. Those who knew about voluntary hospitals should co-operate with those who had little experience of curative medicine, and little or nothing to do with it. The medical officer of health was now the main person responsible to the councils on questions of health. As long as the councils dealt with preventive medicine that worked well enough, but when the councils were about to enter on the founding of hospitals, which would steadily grow, it was reasonable to bring to the aid of the medical officer of health those members of the medical profession who had spent their lives in the cure of disease. The whole-time medical officers of England and Wales numbered 1,740, whereas the medical men who were in active practice in England and Wales numbered 30,000. Could the great work of hospital management on which the councils were going to enter be undertaken without an organic nexus with those whose lives were spent in curative medicine? His amendment not only asked that councils in preparing schemes should consult representatives of voluntary hospitals, but that they should also consult the doctors of the district, who were competent to deal with the cure of disease. It was as easy to find a coherent body of medical men in any district as to find a coherent body representing the management of voluntary hospitals. Experience of the Poor Law was little or no help in the administration of a curative hospital. The status of the medical officers was different. Experience of the Poor Law might be a disadvantage in founding a hospital which was to approximate to the quality and work of the voluntary hospitals. In dealing with the health of the people it would be more and more necessary to have institutional treatment. Improvement in the quality of panel practice would depend largely on institutional provision. He did not deceive himself by thinking that voluntary hospitals alone were any longer going to be adequate to the needs of the country, and for that reason he was most anxious that some machinery of co-operation should be provided which did not depend on the will of the local authority nor upon which Minister of Health was in office. Should there come into office some Minister in favour of an entirely nationalized or municipalized medical service for the country, an opinion such as Lord Dawson expressed, if recorded in the bill, would make it difficult for him to transpose the medical policy of the country. Lord Dawson added that he was not wedded to the words of his amendment.

Lord JOICEY said no question in the bill aroused more interest in the country than this of the hospitals. Owing to taxation voluntary hospitals had difficulty in getting enough money to carry on their work, and as time went on it would be necessary for some contribution to be given if these hospitals were to continue in their present form. Anyone who had to do with voluntary hospitals realized that the services they gave through the medical profession and the nurses could not be so satisfactorily rendered by any hospital under the control of a local authority or of the Government. On Tyneside and the Wear the workmen had a system of contributing to the voluntary hospitals, and their representatives were put on the committees, providing a valuable body of men who took an interest in the hospitals. It would be disastrous if the great services of the voluntary hospitals were not assisted generously.

Lord ATKIN suggested that the amendment which Lord Onslow had put down on the subject was too restricted. It only proposed consultation with any body within the county which was considered to represent the voluntary hospitals. If no such body existed then no obligation would be placed upon the county council. It was essential that the new scheme should be started with the good will and co-operation of the medical profession. It was impossible to start a hospital system to which the poor could come freely and the moderately poor on making payment if necessary unless the medical profession and the general practitioners had some voice through their proper representatives in the organization. He supposed the new municipal hospitals, if founded, would wish to draw on the good will and services of specialists and consultants. Surely it would be right if such a scheme were devised after consultation with the medical profession as a whole. The British Medical Association represented,

for practical purposes, the whole of the medical profession, and had branches in every county, so there should be no difficulty in consulting the medical authorities.

Lord KNUTSFORD said those with experience of voluntary hospitals were extremely anxious to co-operate with the bill. They desired that any new hospital should not overlap and do the same work as the voluntary hospitals. They did not wish money to be wasted in carrying out work which might be done by a hospital set up by the county council across the road.

Lord JESSEL asked what would be the proper authority to consult in London. Would it be King Edward's Hospital Fund? He hoped the British Medical Association would have some say in the matter.

Lord READING said he supported Lord Dawson's proposal that the representatives of the medical practitioners should be consulted.

Reply for the Government.

Lord ONSLOW, for the Government, said there had been a valuable discussion of the bill as it affected the voluntary hospitals of the country. The Government desired to encourage the co-operation between local authorities and hospitals, from which so much might be expected in the future. The Government also wished to make the best use of existing institutions. They all knew what was meant by a voluntary hospital, but there was no precise definition of one. The first thing the Voluntary Hospitals Commission had had to do was to devise a definition, which worked fairly well for the purpose of distributing a Government grant, but could not be used at present because it did not include such institutions as mental hospitals. The amendment which later he would move for the Government proposed that county and county borough councils should themselves be judges of the bodies which might represent the voluntary hospitals of their districts. The Government proposed that the authorities should make arrangements for meeting these bodies, and the Minister of Health would be glad, in a circular or otherwise, to point out the disability of the fullest co-operation with the voluntary hospitals. Under the clause which he hoped to introduce local authorities could consult the local hospital committees where these functioned or were resuscitated for the purpose. These committees had developed in some places, and would become hospital councils in some county boroughs. Alternatively the local authorities could use the committees of the British Hospitals Association, which, he believed, were soon to be reorganized and put on a county basis. Voluntary hospitals committees, where they functioned, included representatives of the local authorities, of the medical profession, both general practitioners and consultants, and of voluntary hospitals, both large and cottage hospitals. Any hospital had only to join the British Hospitals Association and its views would be available to the local authorities through that channel. Lord Onslow understood that Lord Dawson accepted the Government amendment, as it covered the point put in the first part of his own amendment, but Lord Dawson desired to ensure consultation with some body representing the practitioners on the medical and surgical staffs of the voluntary hospitals in the area. Lord Onslow could not propose anything at the moment to meet this desire. He hoped on the report stage to add to the clause words providing that some of those consulted should be representatives of the medical profession in the district. He did not know whether King Edward's Hospital Fund would be the most suitable body for London. It was desirable to leave the local authority to choose the body which would best represent the voluntary hospitals in the district.

Lord HANWORTH said the clause Lord Onslow proposed to move was so loose that it carried out nothing. He suggested another form of words.

Lord READING then withdrew his amendment.

Lord DAWSON said he would not move his amendment now. He did so in the hope they would get more out of the Government than good intentions. The amendment proposed by Lord Onslow gave very little.

The House then agreed to Clause 4.

Clause 5, dealing with alternative powers of giving assistance, empowers councils to declare that assistance which can legally be given, either as poor relief or under seven special statutes, shall be given under these statutes, such as the Public Health Act, Mental Deficiency Act, and Maternity and Child Welfare Act.

Lord RUSSELL moved to add to the list of Acts "or any other enactment mentioned in the scheme."

The LORD CHANCELLOR, in resisting this amendment, said the Lunacy Act had been deliberately omitted from the list of enactments. Under the Lunacy Act a public lunacy authority could only deal with certified lunatics, but under an earlier section of the Lunacy Act a number of persons infirm in mind but not certified were in Poor Law institutions. If brought under the Lunacy Acts these persons must be certified, which would probably be undesirable, or the powers of lunacy authorities might be extended to deal with persons without certification, a controversial alternative. The Government thought that the question of taking lunacy out of the Poor Law altogether, as he thought the Royal Commission on the Lunacy Law recommended, should be dealt with when Parliament dealt with the Lunacy Acts. It was hoped to introduce comprehensive legislation based on the Commission's report.

Lord Russell's amendment was negatived.

Consultation with Hospital Representatives.

The House of Lords was again in committee on the Local Government Bill on March 6th, when Lord ONSLOW moved to insert, after Clause 12, the following new clause relating to consultation by councils of counties and county boroughs with bodies representing voluntary hospitals:

". . . The council of every county and county borough shall make such arrangements as they think desirable for securing that the functions transferred to them under this part of this Act with respect to the provision of hospital accommodation will be discharged after consultation with such body, if any, within the county or county borough as they consider to represent the voluntary hospitals in the area."

He said he moved this subject to the undertaking he had given Lord Dawson that on the report stage he would add words providing not only for consultation with the representatives of voluntary hospitals in the county or county borough, but also with the medical and surgical staffs of the voluntary hospitals. He had not had time to reconsider the wording of the clause.

Lord COZENS-HARDY remarked that hospitals, particularly those with medical schools, had spheres of influence which seldom marched with the boundaries of a county or county borough. He asked for reconsideration of the words "within the county or county borough," and also of "voluntary hospitals in the area."

Lord DAWSON had given notice that, as an amendment to Lord Onslow's suggested new clause, he would propose to add words enjoining consultation by the local authority also "with any body existing in the area which is so constituted as to be representative of the duly qualified medical practitioners and of the medical and surgical staffs of the voluntary hospitals in the area."

Lord Dawson suggested that it would be unwise for the House to commit itself to the wording of Lord Onslow's clause, which did not meet the wishes of the friends of voluntary hospitals. Lord Onslow's offer to arrange for the representation of medical and surgical staffs of hospitals was not all that was desired. They wanted a body representative also of the duly qualified medical practitioners.

Lord Dawson did not move his amendment, and Lord Onslow's new clause was provisionally accepted.

Recovery of Maintenance Expenses.

Clause 15 places on the councils of counties and county boroughs and all other local authorities the duty of recovering from any person who has been maintained by them in an institution, other than an institution for treatment of infectious disease, all the expenses of maintenance or such part as the authority deems that person able to pay. Lord PARMOOR moved to leave out the operative part of the clause. He said it imposed on the county council an obligation to recover from any person who had been maintained in any hospital the incidental expenses incurred. That would prevent people from taking advantage of hospital treatment. Voluntary hospitals, by a well-known legal principle, had no power to recover charges in respect of patients. When a man was brought in who could afford an adequate payment they could only ask him to pay. At St. Bartholomew's Hospital, which treated over 100,000 patients in a year, there was no question of payment being enforced. The whole of medical and surgical science was at the disposal of a man, however poor. Why, when a county council provided treatment, were venereal disease and tuberculosis the only two infectious diseases for the treatment of which a charge would not be made?

The LORD CHANCELLOR said that when to-day the guardians provided relief for a person in an infirmary or in a workhouse the recipient and those legally liable to maintain that person were liable for the cost of the relief, and the guardians were under a statutory obligation to recover. If the clause were omitted county councils would be able to recover expenses of treatment in hospitals maintained under the Poor Law powers, but not in those established under Public Health Acts. That seemed an indefensible anomaly. Infectious disease, which he understood to include scarlet fever and small-pox as well as venereal disease and tuberculosis, was treated differently, because a man was sent to hospital to protect his fellows from the risk of contagion.

Lord PARMOOR withdrew his amendment, and Lord ARNOLD moved another to make the recovery of the expenses of treatment optional instead of compulsory.

Lord READING regretted that the Government insisted on the provisions of the clause, but by 85 votes to 29 the House retained the word "shall."

On a subsequent amendment which he proposed to the same clause Lord ARNOLD asked whether surgical tuberculosis was classed as an infectious disease. Lord ONSLOW said he could not answer definitely.

Lord DAWSON said Lord Arnold's amendment was an instance of the importance of having doctors who spent their lives looking after

curable disease associated with the medical officer of health from the moment that councils undertook these questions. It would be impossible to draw up a list of what the medical profession regarded as infectious diseases, because knowledge was ever growing. The present opinion would be that a large number of cases of tuberculosis were not dangerous to the health of others. In many cases of surgical tuberculosis the danger of transmission of the disease was very small. The same might be said of cancer. The prevailing opinion was that cancer was not an infectious disease.

Lord BLEDISLOE agreed that opinion on the infectivity of disease varied with medical knowledge. A Royal Commission which sat some twenty years ago to consider the relationship between human and bovine tuberculosis had stated that tuberculosis was of a markedly hereditary character. That opinion had been scrapped by all enlightened medical men for at least fifteen years.

Lord ARNOLD withdrew his amendment, and a discussion followed on the propriety of recovering hospital costs from the relatives of patients.

Lord COZENS-HARDY moved to add a proviso that a local authority should not seek to recover cost of treatment from a patient or from his relatives when an association or fund for the support of hospitals had bargained with the council to pay an agreed charge in respect of that patient, being a person entitled to benefits from that association or fund. He said this was intended to help the associations which, by weekly contributions from employers and their workmen, had done much to relieve the financial anxieties of many voluntary hospitals.

Lord ONSLOW said the point was interesting and important, and had not been raised in the Commons. He asked time to consider it, whereupon Lord Cozens-Hardy withdrew his amendment.

Clause 15, and subsequent clauses, were added to the bill.

The Whole-time Medical Officer of Health.

The debate was resumed on March 7th, when Lord HALSBURY moved an amendment to Clause 53, which makes provisions regarding medical officers of health. The first section of this clause enacted that every county council, after consultation with district councils wholly or partly within the county, should formulate arrangements for securing by a combination of districts or otherwise that every medical officer of health subsequently appointed for a district should be restricted by the terms of his employment from engaging in private practice as a medical practitioner. Lord Halsbury moved to leave out all the words after "securing," and to insert "the future appointments by district councils of medical officers of health, whether by combination of districts or otherwise, which shall most conduce to the efficient carrying out of public health services within the county as a whole, as well as within the district to which they are respectively appointed." Lord Halsbury said it was true that at the end of Clause 53 a proviso enabled the Minister in exceptional circumstances to waive the condition that in future when any medical officer was appointed he should be appointed as a whole-time officer and not allowed private practice. That, however, was to be the ordinary and primary condition. The second report of the Royal Commission on Local Government was in accordance with the report as drafted, but this finding was based on evidence given by the Minister himself and by county councils and other administrative bodies which were thinking primarily of what would be most convenient for them. Undoubtedly whole-time servants would be more suitable for their purpose, and more easy to deal with; but the question really was whether the medical officer of health would not be more efficient in his district if he were to keep up the curative part of his work as a doctor and not be confined to an administrative position where he did not exercise his profession.

Lord ONSLOW said Lord Halsbury cut at the root of the recommendations with regard to medical officers made by the Royal Commission and embodied in the bill. The report of that Commission showed that the Rural District Councils Association considered it desirable that the medical officer of health should be a whole-time officer whenever practicable, although it was in the rural districts that the part-time officer was usually found. Lord Onslow cited a letter from the Medical Secretary of the British Medical Association to the *Times*, in which he said that the policy of that body as adopted in 1911 was that "in the general interests of public health and the medical profession it is desirable . . . that medical officers of health should, as a rule (and without prejudice to those at present holding part-time appointments), be required to devote their whole time to official duties." Lord Onslow said there had been a tremendous development of these duties in recent years, and the demand for specialized knowledge had made it necessary that the medical officer of health should have a diploma in public health. Further, the private practitioner had to attend to his private as well as his public duties, and it was undesirable that a man should be placed in a position where these duties might conflict. It was not necessary that the medical officer should serve one district alone. He might serve two or three districts or an urban and a rural district, but it was desirable that he should be a whole-time public servant. Another point was that there might be situations in which a private practitioner with great demands upon his time would have to choose between the interests of his private patients and his public duties. There was a provision in the bill whereby, when a system of part-time officers was working well, a loophole was given for their employment, but as a general rule the right policy to follow throughout the country was to have whole-time medical officers of health in accordance with the terms of the bill.

Lord HALSBURY thereupon withdrew his amendment, and Clause 53 was agreed to; as was Clause 54, which deals with the qualifications of certain medical officers and health visitors.

Maternity and Child Welfare.

Clause 55 is concerned with maternity and child welfare services. It provides that in any district where services under the Maternity and Child Welfare Act are provided by a council which is not the local educational authority, the Minister may, on the representation of that educational authority, and if he is satisfied that the change would conduce to more efficient administration, transfer to the local health authority the maternity and child welfare duties which are being performed by the other council.

Lord ARNOLD moved to insert an amendment providing that, when taking such action, the Minister should have regard to local conditions and requirements. He said the amendment would withdraw maternity and child welfare services from the councils of certain urban districts which had grown rapidly in the last twenty years, but were not educational authorities. He instanced the cases of Coulsdon, Purley, Sutton, and Barnes. He also wished to ensure that the Minister should not be able, on the application of the county council, to transfer maternity and child welfare services to the county council unless satisfied that the transfer would conduce to more efficient administration, having regard to local conditions and requirements. Lord Arnold said that under this bill the county councils would be overburdened without the necessity of administering maternity and child welfare schemes, which had for years been administered by others. Why should Parliament upset existing arrangements if they worked well?

Lord ONSLOW said the Maternity and Child Welfare Act of 1918 had provided that a district could become a maternity and child welfare authority, but the bill encouraged and provided machinery for the transfer of these duties to a body which was a school medical authority. The clause, however, provided a great deal of latitude so as not to interfere with the child welfare committee which was doing good work. The reason for the policy of combining child welfare functions under an authority which was also a school medical authority was to place the supervision of the child and the mother also under the care of one and the same local authority from pre-natal days until the child ceased to be of school age. Provision was made to bring the midwives under the same supervision as the maternity and child welfare authorities. It was desirable that the school medical authority should be under the same body. They might trust the Ministry of Health to see that, in order to obtain uniformity, they did not take away what was being well done already. Uniformity would be obtained gradually.

Lord ARNOLD said he thought Lord Onslow's reassurance would do something to remove misgivings. The amendment was withdrawn, and Clause 55 was added to the bill, as was also Clause 56 dealing with notification of births.

Clause 57 enacts that if the council of any district has established a child welfare and maternity committee and employs a medical officer of health, who, by the terms of his appointment, is restricted from engaging in private practice, that council may apply to the Minister to be made the local supervising authority under the Midwives Act, and the Minister may so direct after consultation with the county council.

Lord HALSBURY moved to limit this to councils which were also local educational authorities. He said the amendment would provide larger areas for the control of midwives than did the bill. Midwives objected that if they were under the control of small areas their work would take them outside those areas, and they would find themselves under a dual control with conflicting rules and regulations made by the district council and the county council. If the district were that of the local educational authority it would be a district of some size. The larger the area the less likelihood of such local difficulty as that of a doctor preferring one particular midwife because he had been working with her and employing her to the exclusion of others. Furthermore, it would be much easier to get an experienced inspector for the larger area. Under the Midwives Act, 1902, there was power for counties to delegate the inspection of midwives to a smaller area. Ten counties adopted that, but every one of them, after trial, gave it up.

Lord KNUTSFORD said he was authorized to say that the Central Midwives Board objected to the transfer of powers of inspection of midwives from the county council to a district council. Objection was also taken by Queen Victoria Jubilee Nurses, by the Incorporated Midwives' Institute, and by the College of Nursing. This was the first opportunity there had been of voicing the unanimous opinion of every one of the bodies concerned with

midwives. It would be impossible for the district council to employ a whole-time inspector of midwives' work.

Lord ONSLOW drew the attention of the House to the recommendations of the Royal Commission on which the clause was based. The Commission recommended that the county council should transfer these functions to a district council only when the Minister was convinced that the district council was in a position to discharge the whole of the functions of the local supervising authorities. A number of towns approaching the 50,000 limit had felt some displeasure because these duties had been taken away from them, and the clause was directed to meet the case of such towns. He did not think that the interest of the midwives was likely to be injured by its provisions.

In asking leave to withdraw his clause, Lord HALSBURY hoped that before the report stage Lord Onslow would consider whether the midwives themselves should be given some say in the matter. The House then agreed to Clause 57, and also after a technical amendment to Clause 58, which deals with the provision of hospital accommodation for infectious disease.

The committee stage was completed on March 8th. On that day Lord BUXTON moved an amendment to Clause 78, which provides for the discontinuance of grants set out in the schedule to the bill. He moved to insert "other than grants for maternity and child welfare." He said that under the existing system when a local authority wished to institute or extend a maternity home or child welfare institution the Ministry of Health gave a grant, pound for pound. If these services were brought, as the bill intended, under the block grant system no additional grant for the extension of maternity and child welfare work would be given. The Government grant for these services had risen from £12,000 a year in 1924 to just over £1,000,000 a year, and there were 2,634 centres. The present system had been a great stimulus to the centres, but that was a reason for giving them greater encouragement instead of damping them down. He did not think that the method suggested in the bill whereby a Minister could force a recalcitrant authority to institute or extend these centres was a good one.

Lord BUCKMASTER said the British ratio of maternal mortality was a disgrace. Compared with those in Holland the deaths were as 14 to 2. There was hardly a medical man who would not say that maternal mortality was almost entirely preventable, as in Holland.

Lord ONSLOW said Lord Buxton's amendment would alter the bill fundamentally, cutting at the root of its financial system. A percentage grant was a stimulus to the richer areas, but maternal mortality was in the poorer districts, which could not afford to raise the initial sovereigns to get this pound for pound grant from the Government. To enable those poorer areas to get the necessary money for their services the Government had brought forward the block grant. It was the duty of the Minister of Health to see this service was effectively carried out. Local authorities would be told they would not get the money unless they spent it properly.

Lord Buxton's amendment was negatived, and Clause 78 approved.

The House approved Clause 93 and subsequent clauses, including those dealing with transferred officers, compensation to existing officers, and the superannuation of transferred Poor Law officers. Amendments on these provisions were moved, but withdrawn, and the committee stage was completed.

Bills.

The Factory and Workshops (Cotton Cloth Factories) Bill formally passed through report stage in the House of Lords on March 5th. On March 7th it was read a third time and sent to the Commons.

The Mount Vernon Hospital Bill was read a second time in the House of Lords on March 7th, on the motion of Lord Donoughmore, chairman of committees.

Small-pox.—In an answer to Mr. T. Griffiths, on March 7th, Mr. CHAMBERLAIN said the number of deaths classified as due to small-pox for the purposes of the Registrar-General's statistics during the thirteen months ended January 31st last was 58. No statistics were available giving the total number of deaths from influenza during the current year. He was aware of the importance of early medical attention in cases of influenza, but he saw no reason to empower the guardians of rural parishes to make emergency orders for medical and other relief in cases of illness. Answering a further question, Mr. Chamberlain said he had seen the statement of the medical officer of health for Stepney that many cases of small-pox had been mistaken for influenza. No special instructions had been issued by the Ministry of Health advising medical officers to take special precautions for avoidance of such occurrences, but the matter had been referred to in a circular issued by the department last year, and in the annual reports of the chief medical officer. Mr. Chamberlain, on March 7th, also told Mr. Groves that the figure of 37 deaths from small-pox in the first half-year of 1928, given in the chief medical officer's annual report for 1927, were, as explicitly stated in the report, provisional.

Vaccination and Encephalitis.—Mr. CHAMBERLAIN, replying to Mr. Groves, on March 11th, said that from October 1st, 1927, till December 31st, 1928, 65 cases in which symptoms suggestive of disease of the central nervous system within a month of vaccination had been brought to the notice of his department. Of these, 32 were fatal. All cases of this kind were reported to the Departmental Committee on Vaccination, but he was not yet able to say how many of these 65 cases were regarded by the committee as cases of encephalitis following vaccination.

Silicosis.—Sir W. JOYNSON-HICKS, on March 11th, told Mr. Kelly that local joint committees of employers' and workers' representatives had been set up under the Refractories Industries (Silicosis) Scheme for seven areas. A scheme now under consideration for the sandstone industry provided for the appointment of similar committees to deal with cases of silicosis in that industry. The areas and constitution of the committees under this new scheme would be settled in consultation with the employers' and workers' associations.

Mental Deficiency.—Dr. FREMANTLE asked Mr. Chamberlain, on March 7th, the date of publication of the second section of the report of the Departmental Committee on Mental Deficiency. Mr. CHAMBERLAIN said he could give no undertakings about any portions of the report save the section which Lord Eustace Percy had promised to publish. He had not yet had time to consider it properly. Dr. FREMANTLE remarked that the report was extraordinarily important.

Census of the Insane.—On January 1st, 1929, the insane patients in England and Wales were: in county and borough mental hospitals 115,690, in registered hospitals 2,034, in licensed houses 2,615, making a total of 120,339. A previous answer by Sir John Gilmour showed that, on the same date, the total number of lunatics in Scotland was 18,917.

Poor Law Relief.—Mr. CHAMBERLAIN states that in January, 1929, the number of lunatics in asylums under the Poor Law, persons in receipt of domiciliary medical relief, and casuals was approximately 127,000. On January 12th the number of persons in receipt of other forms of Poor Law relief in England and Wales was 1,141,997. The latest figure available for the number of persons in receipt of relief in Scotland, exclusive of vagrants, is 209,461, on September 15th, 1928.

Sanitation in the Hop Gardens.—Mr. CHAMBERLAIN announced on March 7th, that the terms of a further general communication to Kentish local authorities with reference to sanitary conditions during the hop-picking season were being considered. In three instances last year representations from the Ministry of Health had led to the adoption of an improved code of by-laws.

Notes in Brief.

Mr. Chamberlain cannot undertake to introduce legislation empowering local authorities to close redundant slaughter-houses.

The question of payment of midwives for emergency work will be considered by the departmental committee appointed to inquire into the working of the Midwives Act.

In the year 1928 the number of convictions for drunkenness in the Metropolitan Police district were: males 18,364, compared with 21,177 in 1927; females 4,916, compared with 5,977 in 1927. In the City of London the equivalent figures were: males 280, compared with 298; females 81, compared with 84.

Mr. Chamberlain has no information showing the approximate number of inhabitants of condemned houses in England and Wales, nor the approximate number who live in areas designated as slums.

[The report on the Local Government (Scotland) Bill has been held over until next week.]

Medical News.

SIR HUMPHRY ROLLESTON will give a lecture on industrial disease and its prevention before the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1, on March 21st, at 3 p.m., with the Duke of Northumberland in the chair. At the sessional meeting of the Institute to be held in the Council House, Birmingham, on April 5th, Mr. H. H. Humphries will open a discussion on some drainage problems in Birmingham, and Dr. H. P. Newsholme will open a discussion on co-ordination and co-operation in preventive medicine.

AN industrial nursing conference, arranged by the Industrial Welfare Society, will be held at the Hotel Metropole, London, on April 19th. Lady Dawson of Penn will receive the nurses at an evening reception. On April 20th visits will be made to several factory clinics, so that the delegates will have an opportunity of seeing industrial nursing in practice.

UNDER the auspices of the National Council for Mental Hygiene, Sir C. Hubert Bond will deliver a lecture on the mental hospital of to-day, at the rooms of the Medical Society of London, 11, Chandos Street, Cavendish Square, W., on Wednesday, March 20th, at 5 p.m.

AT the meeting of the Royal Microscopical Society in the lecture hall at 20, Hanover Square, London, on March 20th, at 7.30 p.m., a discussion will be held on Dr. H. Moore's paper on "The mode of formation of the image in the microscope." The biological section will meet in the library on April 3rd.

THE annual business meeting of the Mental After Care Association will be held at Bridewell Royal Hospital, New Bridge Street, E.C., on Tuesday, March 19th. The president, Sir Charles Wakefield, will take the chair at 3 p.m.

THE last of the present series of lectures arranged by the Fellowship of Medicine will be given at the Medical Society, 11, Chandos Street, W.1, on March 18th, at 5 p.m., when Mr. H. W. Carson will speak on pitfalls on the right side of the abdomen. The final demonstration of the series will be given at the Wellcome Museum of Medical Science, 33, Gordon Street, W.C.1, on March 20th at 4 p.m., by Dr. S. H. Daukes, on the various methods of drug administration. The lecture and demonstration are free to medical practitioners. There will be no further special courses until after Easter. Those taking place in April are as follows: a daily practitioners' course, 4 to 5.30 p.m., at the London Temperance Hospital, April 8th to 19th; a course in tropical medicine at the London School of Hygiene and Tropical Medicine, April 9th to May 2nd; electrotherapy at the Royal Free Hospital, on Wednesdays at 5.15 p.m.; medicine, surgery, and gynaecology at the Royal Waterloo Hospital, April 15th to May 4th; and a course in neurology at the West End Hospital for Nervous Diseases, from April 15th to May 11th, at 5 p.m. daily. Detailed syllabuses of these courses, with information about the general course of work at the various London hospitals, and copies of the *Post-Graduate Medical Journal*, may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

A NEW series of specially conducted tours is being arranged this year under the auspices of King Edward's Hospital Fund for London. The first is a visit to the Regent and Gerrard telephone exchanges on Saturday, March 23rd, at 2.30 p.m., when the Assistant Controller of Telephone Exchanges will explain the working of the telephone system. Tickets (price 7s. 6d.) may be obtained from the Secretary, King Edward's Hospital Fund for London, 7, Walbrook, E.C.4.

THE funeral of Sir Hector Mackenzie took place at Highgate Cemetery on March 6th. A memorial service held in St. Thomas's Hospital Chapel was attended by a large gathering of members of the medical profession and representatives of bodies with whom he had long been associated.

THE programme has now been issued for the Congress of the Royal Institute of Public Health to be held in Zürich from May 15th to 20th. The subjects of sectional discussions are State medicine and municipal and social hygiene; industrial hygiene and industrial diseases; child welfare, school hygiene, and women and public health; pathology, bacteriology, and biochemistry; tuberculosis; climatology and sports hygiene; and veterinary medicine and meat hygiene. In connexion with the congress visits are being arranged to Rheinfelden, the Rhine Falls and Schaffhausen, and other places of interest. Extensions to Lucerne, Leysin, Innsbruck, Munich, and Czechoslovakia are also practicable. Further details about the congress may be obtained from Dr. T. L. Kelynack, 37, Russell Square, W.C.1.

THE Minister of Health has expressed his approval of a proposal to invite the International Union of Local Authorities to hold its next congress in 1932 in this country. A unanimous resolution in favour of such an invitation being given was passed by the Association of Municipal Corporations in November last. Resolutions in sympathy with this action have been since passed by the Corporation of the City of London, the London County Council, the Parliamentary Committee of the County Councils Association, and the Urban and Rural District Councils Association.

A TOUR is being arranged for the middle of July to include various climatic resorts and spas in North Spain; it is proposed to visit San Sebastian, Bilbao, Santander, Burgos, Santillana, and Altamira, among other places. The tour will last about ten days and be conducted in charabancs; it is limited to medical practitioners and their wives and daughters. Further information may be obtained from Dr. M. Mañeru, Ronda del Conde Duque, Madrid.

A POST-GRADUATE course in children's diseases will be held in Paris from April 3rd to 13th, at the Hôpital des Enfants-Malades, 149, Rue de Sevres. The fee is 250 fr., and further information may be obtained from the secretary of the Faculty of Medicine of the University of Paris.

THE first annual conference week of the International Society of Experimental Phonetics will be held in Hamburg from July 24th to 31st. Addresses, demonstrations, and practical work will be arranged, and there will be an exhibition of apparatus. Further information may be obtained from Professor E. W. Scripture, 25, Howard Road, Coulsdon, Surrey.

THE thirteenth International Congress of Physiology will be held at Boston, U.S.A., under the presidency of Professor H. H. Howell, from August 19th to 23rd.

WE have received the first issue, published in January, of a new monthly journal, entitled *Revue Belge des Sciences Médicales*, which is the official organ of the Medical Section of the Scientific Society of Brussels. The editorial staff consists of Professor L. De Beco of Liège, Drs. J. F. Heymans of Ghent, A. Lemaire and J. Maisin of Louvain, and A. Bessemans and J. Rodhain of Brussels. The first issue consists of original articles, clinical records, a survey of recent work on haematology, abstracts from current Belgian literature, and reviews of books. The subscription is 80 francs for Belgium, 100 francs for France, and 175 francs for other countries.

THE Amalgamated Press Ltd. is issuing in about thirty fortnightly parts a popular presentation of modern biological principles, entitled *The Science of Life*, written in collaboration by Mr. H. G. Wells, Professor Julian Huxley, and Mr. G. P. Wells.

THE issue of the *Journal of the Egyptian Medical Association* for December, 1928, is a special historical number, printed in English, French, German, and Arabic, and containing articles on ancient and modern Egyptian medicine and the evolution of public health administration in Egypt. It is copiously illustrated with photographs and diagrams of surgical instruments found in the course of excavation or depicted on the walls of temples.

Mr. BERNHARD BARON, who recently gave £10,000 for a new casualty department at the Royal Sussex County Hospital, Brighton, has notified the authorities of his intention to contribute £5,000 towards a new operating theatre.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

INSOMNIA IN CHILDHOOD.

"P. F. C." asks for suggestions for the treatment of a boy, aged 4, with normal development and previous good health, except for long-standing constipation and nocturnal enuresis. During the past five months he has woken up regularly at about 2 a.m., when he chatters and plays, refusing to go to sleep. An uncle suffers from epilepsy, but otherwise the stock is healthy.

ENURESIS.

DR. R. E. M. TAUNTON (London, W.7), replying to "K." (March 9th, p. 485), writes: I suggest trying Dr. H. C. Cameron's glucose prescription, which in many cases I have found to be effective. To 1 lb. of liquid glucose add two pints of water and one or two lemons. Boil down to one and three-quarter pints and bottle it. The dose is 2 oz. three times a day. This causes no gastric symptoms or glycosuria, and enuresis often ceases after the first day's administration of the glucose.

INCOME TAX.

Partial Use of Car for Private Purposes.

"W. M. K." states that his car is used for private purposes one month in each year. The inspector of taxes proposes to exclude from the total car expenses £10, as representing part of the year's cost of insurance, wear and tear, and licence. "W. M. K." contends that that is wrong, because those expenses are not increased by private use—that is, they would be the same if the car were left in the garage during the holiday month.

*** We think that there is little, if any, prospect of contesting successfully the inspector's view. The general practice where private benefit is derived from business or professional expenditure is to make some reasonable allocation between the two, and we fear it is too well settled to be disturbed in such circumstances as are explained. It is not entirely inequitable.

Cessation of General Practice Work.

"G. M. C." sold the practice as from January 1st, 1928, did no professional work for four months, and since then has been taking clinics and giving lectures. What should be done to avoid being charged income tax for 1928-29 on the basis of the earnings for 1927—the previous year.

*** The previous year's basis applies to the calculation of the amount of profits assessable for a particular source of income. As "G. M. C." is not assessable for 1928-29 in respect of the sort of profits earned in the previous year—that is, the earnings of general practice chargeable under Schedule D—that basis has no application. "G. M. C." should write to the inspector of taxes dealing with the assessment, stating the full facts and undertaking to supply an amended statement as soon as possible of the actual earnings for the year ending April 5th, 1929.

LETTERS, NOTES, ETC.

QUININE IN INFLUENZA.

DR. H. B. GLADSTONE (London, S.E.) writes: A note on the treatment of influenza in the *British Medical Journal* of March 9th (p. 486) prompts me to advocate the use of quinine, which Burney Yeo in his handbook of treatment regarded as as much a specific in influenza as in malaria. After dabbling in the coal tar products this view was urged on me by a late member of Guy's staff, and since then, for at least fifteen years, I have used quinine and found it a specific. In the 1918 epidemic 2 grains every four hours did not seem to benefit, so I doubled the dose. The type was a severe one, and the remedy had to be stronger. The result was striking; cases that were stuporose became quite bright in twenty-four hours after taking 2 grains every two hours. In a small institution, where infants were admitted, as an emergency measure, from homes where the mother was ill with influenzal pneumonia, several of which had the complaint, among a staff of eight nurses only one contracted the disease, and that in a fugitive way, because they were all given 2 grains of quinine four-hourly as a preventive. Influenza is a disease where the toxins depress the nervous system, and sedatives are dangerous. The complaint needs tonic treatment from the first—quinine for five days, with aspirin for the first two days for the pains (if severe), then strychnine and hypophosphites, or calcium lactophos. A sedative linctus is usually needed for night cough. Although quinine is a popular remedy, skill is required in carrying on the treatment, so one is not merely doing what any layman can do, and complications have to be met. Some patients cannot take quinine, and then sedatives and coal tar products are really beneficial. Here the nervous system is already overexcited, and nerve stimulants would do harm; but in 90 per cent. of cases this does not come in. Quinine acts as an antiseptic as well as a tonic. It is best given in solution—not in pill form—as then it disinfects the throat in swallowing. For this reason (local action) small doses given frequently are better than massive doses at longer intervals.

THE HOUSEHOLD MEDICINE GLASS.

DR. T. R. E. HILLIER (London, N.W.) writes: A very large number of people nowadays use a medicine glass in place of the "domestic" measures—namely, the teaspoon, dessertspoon, and tablespoon. Theoretically, this is a step in the right direction, but let us see what it means in practice. I should say that 99 per cent. of the medicine glasses in use by the layman (and by some doctors!) are in the shape of a diminutive tumbler. These are quite accurate when it is required to measure an ounce or half ounce, but I defy anyone to measure accurately a drachm with one—an ordinary teaspoon is preferable, though the size of these spoons varies a good deal. Now many medicines are prescribed in drachm doses, particularly in the case of children, where the need for accuracy is even greater. There is only one common-sense form of glass, and that is a conical one, with a broad substantial base, marked clearly in teaspoons and tablespoons. Conical measures can, of course, be obtained, but they are almost invariably marked in drachms and ounces—of little use to the ordinary lay person. Moreover, people usually take what is offered them, and this is always the "little tumbler." Bottles marked with the doses may be suggested as a remedy, but most people pour out too much and will not be bothered to replace the excess, or too little, thinking it will be "near enough." All this may appear very obvious, but nevertheless I have proved it to be a matter of considerable importance.

OATMEAL, VITAMIN D, AND CALCIFICATION.

DR. J. D. MACKAY writes: The report by Mrs. Mellanby and Dr. Lee Pattison, on December 15th, 1928 (p. 1079), makes a point which I have not yet seen emphasized in your correspondence columns, the importance to the industrial population of their statement that "cereals, and especially oatmeal, inhibited perfect calcification of the teeth when this vitamin [D] was deficient in the diet." A large amount of oatmeal is consumed by the youngsters of the industrial population under these conditions of deficiency; for working people will not, or cannot, buy sufficient milk—half a pint of milk, perhaps, or a small tin of condensed skimmed milk, to last a few days. There are other sources of vitamin D, but the course which seems to recommend itself would be to forbid oatmeal, and to use, as a substitute, wholemeal (wheat) or wheat-meal. These millings, alone or mixed, make excellent porridge and other things in which oatmeal is used, and would appear to be free from the defects of the latter. There is, however, another point on which this attribute of oatmeal—the prevention of calcification—has given rise to speculation: has it any value at the other end of the scale, in the later years of life? Will a diet of oatmeal, under suitable conditions, prevent calcification where it is *not* wanted? Perhaps these eminent investigators, to whom the thanks of the whole nation are due for their labours, might express an opinion. This latter hope seems the only consolation to the Scots for this sacrifice of their historic diet on the altar of progress; a vision of wild old men champing their oats is at least stimulating.

PAINFUL SHOULDER.

"T. F.," referring to Mr. P. B. Roth's letter on traumatic synovitis of the shoulder, published on December 22nd, 1928 (p. 1156), writes: I have suffered from pain in both shoulders following injuries, the first nearly two years ago, the second more recently. The symptoms have been precisely those described by Mr. Roth. The pain and occasional tenderness have been most marked over the insertion of the deltoid into the humerus, and under the outer third of the clavicle. It has seemed to me to be highly improbable that the symptoms have been due to synovitis, as has been suggested. On the first occasion, while jumping off my bicycle, I fell on one knee, and, to save some plants I was carrying, I must have forcibly contracted the muscles of the shoulder—so forcibly, I concluded from what followed, that some muscular injury must have been caused. The trouble lasted for about four months. The second injury was occasioned by a more serious fall, but there again it may have been caused by a sudden forcible attempt to preserve equilibrium. The immediate pain in the shoulder was severe, and necessitated lying by the side of the road for some time to avoid fainting. This fall occurred within two weeks of six months ago. I still cannot put my hand in my trousers pocket without pain, and I am wakened regularly every night by pain, chiefly near the insertion of the deltoid into the humerus. One symptom not mentioned previously has suggested to me that the innervation of muscles about the joint may have suffered in some way. There has been, and in a minor degree still may be, a sudden jerking of the arm at the commencement of a movement, such as forcibly thrusting a spoon into a coffee cup; this causes spilling of the coffee. The improvement in my condition is so slow that I anticipate another six months passing before all the symptoms disappear.

TYPICAL FLIES.

DR. F. H. HAINES (Ringwood) writes: I note your review of E. K. Pearce's *Typical Flies* on March 2nd (p. 405). The photographs seem to be extraordinarily good. They are designed to give an idea of the "facies" of the species represented and not of the smaller structural points, although they often do this. They compare most favourably with similar illustrations in certain recent classics on other orders of insecta, and would give a beginner the "hang" of the families. Your reviewer's sample of the notes is, I think, hardly fair, nor his comment thereon. It is of first importance to know the colour of the insect the tyro wishes to identify. If thousands of insects are black, thousands are not! Has your reviewer tried to reproduce a whole insect in focus?

MEDIAEVAL TOWNS AND SPAS OF GERMANY.

MR. HENRY BAERLEIN writes: Attention was drawn in your columns by a news paragraph which appeared in your issue of February 16th (p. 330) to a projected tour at Whitsuntide to the mediaeval towns and spas of Germany. This tour I was organizing on the lines of previous expeditions to Czechoslovakia and Jugoslavia, and was aiming at again having between twenty and thirty participants. After the appearance of the notice in the *British Medical Journal* a number of doctors wrote to me for details, but have not yet decided to go; may I point out that if the number of acceptances by the end of March falls short of twenty the tour cannot take place, as the agency in whose hands the management lies cannot for any smaller number make the proper and economical arrangements, either at hotels or in trains. Prospective travellers should send a deposit of £15 to me at the Bath Club, 34, Dover Street, London, W.1, which will be immediately returned if the numbers still fall short of twenty by March 31st.

A DISCLAIMER.

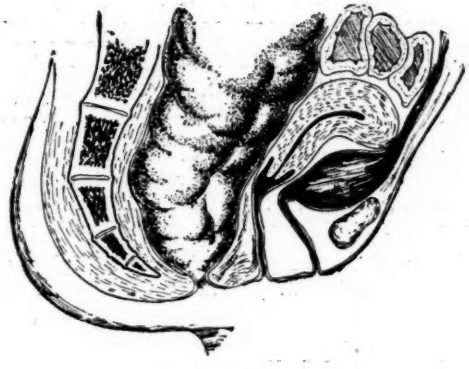
MR. A. P. BACHA, F.R.C.S., writes from Bombay disclaiming all responsibility for a paragraph which appeared in the local vernacular press referring to his professional work and attainments. He protests strongly against the deliberate use of such publicity in the Indian press.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 56, 58, 59, 62, 63, and 64 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 60 and 61.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 67.

The Menace of the Overloaded Bowel



always present, easily becomes serious in women. It causes interference with the pelvic circulation and tends to produce congestion of the uterus, not infrequently followed by functional disorders, producing dysmenorrhœa, menorrhagia, and even inflammatory conditions.

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A liberal trial quantity at the disposal of physicians.

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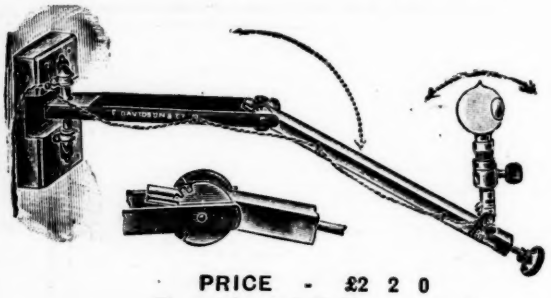
THE "DAVON" BRACKET.



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ELECTRIC PHARYNGOSCOPE.

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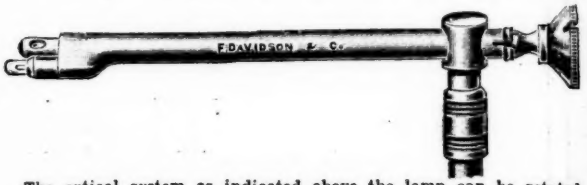

The optical system as indicated above the lamp can be rotated as in a cystoscope so as to bring into view the *pharyngeal nares*, the *larynx, epiglottis*, the *vocal chords*, and the *Eustachian tubes*. A suitable catheter in position is easily observed.

Price ... £5 15s.; or in Walnut Box	£6 5 0
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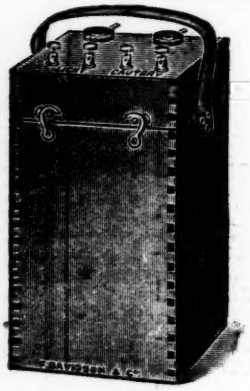
Pharyngoscope with Battery and Rheostat, contained in Walnut Box	7 5 6



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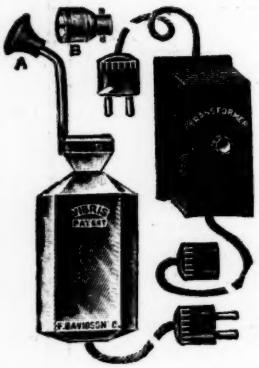

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WORKING ON THE PRINCIPLE OF THE ELECTRO-MAGNET.

THE "VIBRIS" British Patent No. 289712

SUPERSEDES ENTIRELY EVERY OTHER FORM.

Special Features: There is no internal motor. It operates direct from the house current. It is absolutely safe in anyone's hands. The "VIBRIS" is only 6 inches long and weighs but 9 ounces. Results are obtained by:

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Dr. ALQUIER, late chief of the Clinic Salpétrière, Paris, reports in the "Gazette des Hôpitaux": "Many instruments have been devised. After trial I have adopted that working on the principle of the Electro-Magnet, and the 'VIBRIS' is a REAL MEDICAL INSTRUMENT. The oscillations are double the number of the periods of the current, etc., etc."

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1. Man, aged 56 years, presenting rheumatoid hydrarthrosis of both knees. From January to August, 1928. Compression, immobilization, local revulsion, radiotherapy, diathermy, opotherapy (thyroid in small doses), lithine were employed in succession. Result very incomplete: effusion diminished without disappearing, pain persisted in the two knees with thickening of the synovial lining. In August, massage with the 'VIBRIS' at the rate of two sittings of 10 minutes daily was commenced. Result: Notable decrease of pain after the first day. At the end of a week no trace of articular swelling remained. Now the knees have resumed their normal shape, movements are perfectly free, and the patient declared himself cured.
2. Rheumatoid arthritis in a man of 60. After 10 days pain disappeared, all movements without distress, and indeed with agility.
3. Two years pain, despite treatment, resulted in the painful deformities of chronic rheumatism. After 15 days' treatment with the 'VIBRIS' no more suffering, and the articular deformities were clearly reduced in size, movements of fingers quite free and painless."

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